Institut de la statistique du Québec

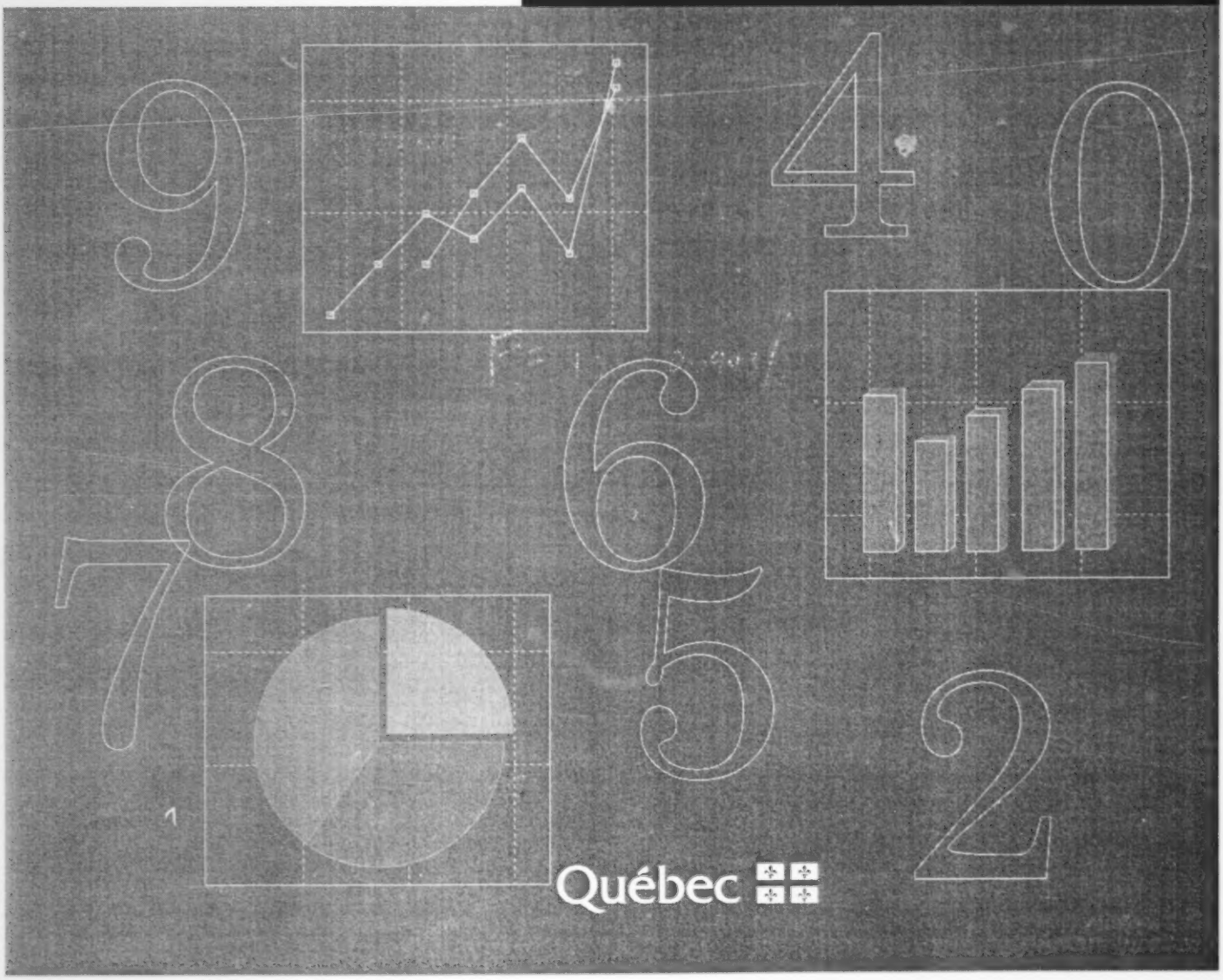
LONGITUDINAL STUDY OF CHILD DEVELOPMENT IN QUÉBEC (ÉLDEQ 1998-2002)

5-MONTH-OLD INFANTS

Parenting and Family Relations

Volume 1, Number 10

COLLECTION
Health and Well-Being



The authors of Volume 1 Number 10 of ÉLDEQ 1998-2002 are:

Part I : Parenting Perceptions and Behaviours

Michel Boivin, *Département de psychologie, Université Laval* (Department of Psychology, Laval University)
Daniel Pérusse, *Centre de recherche Fernand-Seguin, Université de Montréal* (Fernand-Seguin Research Centre, University of Montréal)
Valérie Saysset, *Département de psychologie, Université Laval*
Nathalie Tremblay, *Département de psychologie, Université Laval*
Richard E. Tremblay, *Groupe de recherche sur l'inadaptation psychosociale chez l'enfant (GRIP)* (Research Unit on Children's Psychosocial Maladjustment), *Université de Montréal*

Part II : Family Environment

Christa Japel, Richard E. Tremblay and Pierre McDuff
Groupe de recherche sur l'inadaptation psychosociale chez l'enfant (GRIP), Université de Montréal

With the technical assistance of:

Martin Boivin, *data processing, Direction Santé Québec, ISQ*
France Lozeau, *publications layout, Direction Santé Québec, ISQ*

External readers:

Carl Lachanté, *Département de psychologie, Université du Québec à Trois-Rivières* (Department of Psychology, University of Québec at Trois-Rivières)
Andrée Pomerleau, *Département de psychologie, Université du Québec à Montréal* (University of Québec at Montréal)
George Tarabulsy, *Département de psychologie, Université du Québec à Trois-Rivières*

Volume 1 of ÉLDEQ 1998-2002 was produced by:

la Direction Santé Québec de l'Institut de la statistique du Québec

Volume 1 of ÉLDEQ 1998-2002 was translated by:

James Lawler

ÉLDEQ 1998-2002 is funded by the:

Ministère de la Santé et des Services sociaux du Québec (MSSS) (Ministry of Health and Social Services of Québec)
National Health Research and Development Program of Canada (NHRDP)
Social Sciences and Humanities Research Council of Canada (SSHRC)
Conseil québécois de la recherche sociale (CQRS) (Social Research Council of Québec)
Fonds pour la formation de chercheurs et l'aide à la recherche (FCAR) (Researcher Education and Research Assistance Fund)
Fonds de la recherche en santé du Québec (FRSQ) (Health Research Fund of Québec)

ÉLDEQ 1998-2002 is supervised by:

Mireille Jetté, Coordinator
Hélène Desrosiers, Research Agent
Richard E. Tremblay, Director of ÉLDEQ 1998-2002
Josette Thibault, Research Agent

104-05775/

For further information on the *Institut de la statistique du Québec (ISQ)* (Québec Institute of Statistics) and the statistics available in its databases, contact:

Institut de la statistique du Québec
200 chemin Sainte-Foy
Québec, Québec
Canada G1R 5T4
Tel.: (418) 691-2401 or
Tel.: 1-800-463-4090 (toll-free)

Website: http://www.stat.gouv.qc.ca

This report was produced and published by *l'Institut de la statistique du Québec*, and is distributed by *Les Publications du Québec*.

Les Publications du Québec
1500-D Charest Boulevard West
Ste -Foy (Québec)
G1N 2E5

National Library of Canada
Bibliothèque nationale du Québec

ISBN 2-551-19950-6
ISBN 2-551-19960-3
(*édition originale*) ISBN 2-551-19327-3
ISBN 2-551-19909-3

Copyright © 2000 Government of Québec
All rights reserved.

Reproduction in any form is prohibited except with the expressed permission of *l'Institut de la statistique du Québec*.

May 2000

Forward

Similar to what has been observed in the majority of industrialized nations over the past twenty years, Québec and Canada have seen a significant increase in the costs related to maladjustment, particularly in young people. The Longitudinal Study of Child Development in Québec (*l'Étude longitudinale du développement des enfants du Québec*) (ÉLDEQ 1998-2002) being conducted by *Santé Québec* (Health Québec),[1] a division of *l'Institut de la statistique du Québec (ISQ)*[2] (Québec Institute of Statistics) in collaboration with a group of university researchers, will provide an indispensable tool for action and prevention on the part of government, professionals and practitioners in the field, who every day must face maladjustment in children.

More precisely, a major purpose of this longitudinal study of a cohort of newborns is to give Québec a means of preventing extremely costly human and social problems, such as school dropout, delinquency, suicide, drug addiction, domestic violence, etc. Similar to what is being done elsewhere (in the UK, New Zealand, the US), *Santé Québec* and a group of researchers have designed and developed a longitudinal study of children 0 to 5 years of age (2,223 children in this study and 600 twins in a related one). It will help gain a better understanding of the factors influencing child development and psychosocial adjustment.

The general goal of ÉLDEQ 1998-2002 is to learn the PRECURSORS, PATHS and EFFECTS, over the medium and long terms, of children's adjustment to school. ÉLDEQ is the logical extension of the National Longitudinal Study of Children and Youth (NLSCY, Canada). These Québec and Canada-wide longitudinal studies are both comparable and complementary. They employ distinct survey methods, and use different techniques to obtain the initial samples. Though many of the instruments are practically identical, about a third of those being used in ÉLDEQ are not the same.

This first report casts light on the enormous potential of the data generated by this study. From the descriptive analyses of the results of the first year of the study to the longitudinal analyses of subsequent years, there will be an enormous wealth of data. With updated knowledge on the development of the cohort of young children, the annual longitudinal follow-up will respond to the needs which the *ministère de la Santé et des Services Sociaux du Québec - MSSS* (Ministry of Health and Social Services), who financed the data collection, expressed in both the Report of the Working Group on Youth (*Rapport Bouchard, 1991, Un Québec fou de ses enfants* - the Bouchard Report, 1991, A Québec in Love with its Children) and the policy papers entitled *Politique de la santé et du bien-être, 1992* (Health and Well-Being) and *les Priorités nationales de santé publique 1997-2002* (Public Health Priorities 1997-2002).

Director General

Yvon Fortin

---

1. Certain French appellations in italics in the text do not have official English translations. The first time one of these appears, the unofficial English translation is shown immediately after it. Following this, for ease in reading, only the official French name appears in the text in italics, and it is suggested the reader refer to the Glossary for the English translation.

2. *Santé Québec* officially became a division of the *ISQ* on April 1, 1999.

For further information on the contents of this publication, contact

Direction Santé Québec
Institut de la statistique du Québec
1200 McGill College Ave., Suite 1620
Montréal, Québec
Canada H3B 4J8
Telephone: (514) 873-4749 or
Telephone: 1 800 463-4090 (toll-free)
Fax: (514) 864-9919
Website: http://www.stat.gouv.qc.ca

Suggested citation:

BOIVIN, M., D. PÉRUSSE, V. SAYSSET, N. TREMBLAY and R. E. TREMBLAY (2000). "Parenting and Family Relations, Part I - Parenting Perceptions and Behaviours" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 10.

JAPEL, C., R. E. TREMBLAY and P. McDUFF (2000). "Parenting and Family Relations, Part II - Family Environment" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 10.

This analytical paper is also available in French. Ce numéro est aussi disponible en version française sous le titre :

BOIVIN, M., D. PÉRUSSE, V. SAYSSET, N. TREMBLAY et R. E. TREMBLAY (2000). « Conduites parentales et relations familiales, section I - Les cognitions et les conduites parentales » dans *Étude longitudinale du développement des enfants du Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, vol. 1, nº 10.

JAPEL, C., R. E. TREMBLAY et P. McDUFF (2000). « Conduites parentales et relations familiales, section II - Le milieu familial » dans *Étude longitudinale du développement des enfants du Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, vol. 1, nº 10.

Caution:

Unless indicated otherwise, "n" in the tables represents data weighted to the size of the initial sample.

Because the data were rounded off, totals do not necessarily correspond to the sum of the parts.

Unless explicitly stated otherwise, all the differences presented in this report are statistically significant to a confidence level of 95%.

To facilitate readability, proportions higher than 5% were rounded off to the nearest whole unit in the text, and to the nearest decimal in the tables and figures.

As expected, certain data characterizing various phenomena in the study did not follow a normal distribution. This non-normality, indeed the asymmetry of certain variables measuring child development or the infants family environment, makes it difficult to interpret the results of certain parametric tests (Student's *t* test, Fisher test - ANOVA). In spite of this, the authors, similar to their peers working on longitudinal studies, have calculated and presented associations using estimators such as means, linear regressions and correlations. For these data, caution is recommended when interpreting the results. In annual longitudinal monitoring, trends are important and not each cross-sectional measurement taken in isolation.

Symbols

... Not applicable (N/A)
.. Data not available
– Nil or zero
p < Refers to the threshold of significance

Abbreviations

CV	Coefficient of variation
Not avail.	Not available
Not signif.	Not significant

Acknowledgments

Santé Québec recognizes that the development and implementation of the Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002) flows directly from the synergy of effort and professionalism of many people throughout the whole process of mounting a survey of this size. Since 1995, individuals, various groups and organizations, a survey firm and the staff of *Santé Québec* have become indispensable links in making this ambitious project a reality - the first annual longitudinal survey of Québec infants.

A major characteristic of this project is that a pretest and survey are conducted every year. To accomplish this, we must annually: 1) make two sets of instruments (pretest and survey), 2) conduct two data collections, 3) analyze two sets of data, and 4) produce two types of communications materials. The results of each pretest means fine-tuning and developing instruments for the survey, which follows 17 months later. The results are sent to the parents (highlights), published in reports, and communicated to the scientific community and the public at large. The professionals and staff involved in collecting the data, as well as those involved before and after, must put their nose to the grindstone every year. We cannot over-emphasize our profound recognition of the incredible, concerted effort they are putting into this project over an 8-YEAR period, from the first pretest in 1996 to the final report to be published in 2004!

First, it must be said that without Daniel Tremblay, Director of *Santé Québec* (now part of the *ISQ*) since 1994, Christine Colin, Assistant Deputy Minister responsible for Public Health 1993-1998, Aline Émond, Director of *Santé Québec* 1986-1993, Richard E. Tremblay, Director of the ÉLDEQ research project, and Marc Renaud, President of *le Conseil québécois de la recherche sociale - CQRS* 1991-1997, ÉLDEQ 1998-2002, also known as "In 2002...I'll Be 5 Years Old!," would have never seen the light of day. In turn and together, they developed, defended and obtained the financing for this study. Thank you for your indefatigable tenacity.

A warm thanks to all the researchers and the support staff of their respective research groups, whose determination over the years has never wavered. Putting their research grants together every year has contributed to the development of the instruments, analysis of the data and publication of the copious results.

I would like to thank Lyne Des Groseilliers, ÉLDEQ's statistician since 1996, Robert Courtemanche, statistical advisor, and France Lapointe, ÉLDEQ's statistician 1995-1996. These three colleagues in the *Direction de la méthodologie et des enquêtes spéciales* (Methodology and Special Surveys Division) (*ISQ*) managed, with great skill, to set the signposts and navigate the somewhat winding course of this large-scale survey first.

A very special thanks to all the master designers of the National Longitudinal Study of Children and Youth (NLSCY, Canada). Without their expertise, advice and generosity, our survey would never have been accomplished. In many senses of the word "modeling," ÉLDEQ has learnt a lot from the NLSCY.

We would also like to extend out gratitude to the staff of the *Groupe de recherche sur l'inadaptation psychosociale chez l'enfant - GRIP* (Research Unit on Children's Pyschosocial Maladjustment) at the University of Montréal. Without their expertise, some of our survey instruments would have never been computerized to such a high level of quality.

We would like to thank the personnel in the *Service de support aux opérations de la Régie de l'assurance-maladie du Québec - RAMQ* (Operations Support Section of the Québec Health Insurance Board). Without their efficiency, fewer letters of introduction would have found their way to the correct addresses of respondents.

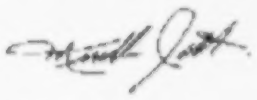
Our sincerest thanks go to our survey firm, *Bureau d'interviewers professionnels (BIP)*. Since 1996, this polling company has been responsible for data collection in the pretests and surveys, and follow-up of families both inside and outside of Québec. Lucie Leclerc, President of *BIP*, has set the standard of quality for our numerous and complex data collections. Assisted by Véronique Dorison, she has instilled in her interviewers a great sense of respect for the respondent families, as well as a rigourous regard for all the norms governing this first-of-a-kind survey in Québec.
A big thank-you to the directors-general, directors of professional services, and staff of the medical records departments of some

80 hospitals in the province who accepted to collaborate in our study at a time when resources were rare and time was at a premium, and when the medical records departments in many hospitals were merging or in the process of doing so. Their support was exceptional. Birthing centres also graciously accepted to participate in this first Québec longitudinal study of children. A special thanks to Julie Martineau, medical records specialist, who contributed to the analysis of indispensable medical information by ensuring very rigourous coding of the data, which often lay concealed in the medical files of the infants and their mothers.

It goes without saying that the staff of *Santé Québec* Division directly attached to ÉLDEQ 1998-2002 are the cornerstone of its success from practically every point of view. Special thanks for their ongoing contribution and constant hard work go to Hélène Desrosiers and Josette Thibault, responsible respectively for analysis of the data and creation of the measurement instruments; Martin Boivin, Rolland Gaudet and Gérald Benoît, who constantly pushed the limits of what computer software can do in terms of programming and data processing; Suzanne Bernier-Messier and Diane Lord, who give meaning to the word versatility, who must organize, code and manage incredible quantities of data to ensure the progress of the study. Not directly attached to the team but who made extremely important contributions are: France Lacoursière, France Lozeau and Thérèse Cloutier, who put the finishing touches to the *Santé Québec* "look" in the survey instruments, reports and conference publications; Lise Ménard-Godin, who conducted fruitful literature searches and advised on many aspects of the collection instruments. The hard work, constant availability, ability to adapt, and finely-honed skills of the people working on this project match the enthusiasm that all our partners have demonstrated in making this study a resounding success.

Finally, I would like to extend a very special thank-you to the 2,223 families who responded to our survey. Thank you for the trust you have shown in *Santé Québec*, our partners and collaborators.

Thanks to your participation, your children have become the veritable stars of ÉLDEQ 1998-2002, and are making it possible, in the short term, to gain a better understanding of psychosocial adjustment in children. In the medium and long terms, they will likely be in large part responsible for the establishment of early detection programs, better designed prevention programs, and more effective interventions for such an important clientele - all of Québec's children.



Mireille Jetté
Project Coordinator
Santé Québec Division, *ISQ*

Preventing Social Maladjustment

It suffices to consider the costs engendered by behavioural problems in children - school dropout, delinquency, alcoholism, drug addiction, family violence, mental disorders and suicide - to conclude that they largely surpass what a modern society can accept, morally and economically. Faced with the enormity of these problems, the first reflex is to provide services to these people which will, ideally, make the problems disappear, or at the very least, lessen their severity. For many years we have tried to offer quality services to children and adults who suffer from antisocial disorders, alcoholism, drug addiction, depression, and physical or sexual abuse. However, in spite of enormous investment, these curative services are far from being able to respond to the demand.

Although the idea of early intervention as a preventive measure can be traced at least as far back as ancient Greece, the second half of the 20th century will certainly be recognized as the dawn of the field of social maladjustment prevention (Coie *et al.*, 1993; Mrazek & Haggerty, 1994). Numerous programs have been developed for adolescents and teenagers to prevent school dropout, delinquency, drug addiction and suicide. Scientific evaluations of these programs have been far too few in number, but they tend to demonstrate that it is extremely difficult to help those most at risk in this age group (Rosenbaum & Hanson, 1998; Rutter, Giller & Hagell, 1998; Tremblay & Craig, 1995). It is becoming increasingly clear that the factors which lead to serious adaptation problems are in place long before adolescence. Hence the idea that the prevention of social adaptation problems should start at least during childhood, and preferably right from pregnancy (Olds *et al.*, 1998; Tremblay, LeMarquand & Vitaro, 1999). These principles are clearly outlined in the objectives of the *Politique de la santé et du bien-être* (Policy on Health and Well-Being) and *les Priorités nationales de santé publique* (Priorities for Public Health) set by the government of Québec (ministère de la Santé et des Services sociaux, 1992; 1997).

The Need to Understand Early Childhood Development

If the field of maladjustment prevention appeared at the end of the 20th century, it has certainly come on the heels of child development. "*Émile,*" by Jean-Jacques Rousseau, needs to be re-read in light of recent studies to realize just to what degree it is impossible to understand the complexity of child development, and therefore the means of preventing deviant paths, simply by reflection or introspection. Although considerable knowledge has been acquired in the neurological, motor, cognitive, affective and social development of children, what really hits home is that Jean-Jacques Rousseau and his followers in education seemed to have had more certainty about the ways of educating children than we do today.

Progress in child development research has made us realize that things are not as simple as we can or would like to imagine. We have obviously all been children, and most of us have become parents, indeed, relatively well-adjusted ones. But we still do not clearly understand when, how and why adjustment problems appear, and above all, how to prevent and correct them.

Our ignorance is obvious when we examine the debates among specialists on the role of parents in the development of maladjustment problems in children. Some suggest that social maladjustment in children is largely determined by genetic factors (Bock & Goode, 1996; Rowe, 1994). Some accentuate economic factors (Duncan & Brooks-Gunn, 1997). Other researchers attribute a determining role to peer influence (Harris, 1998; Harris, 1995; Vitaro *et al.*, 1997). These larger questions lead to narrower ones which focus on particular aspects - the role of fathers in childhood maladjustment, the impact of alcohol and cigarette consumption during pregnancy, the effect of prenatal and birthing problems, the importance of breast feeding and diet; the role of sleep, cognitive development, temperament, and so on.

The majority of these questions are at the heart of the daily concerns of parents, grandparents, educators, family service providers, and legislators. What can we do to maximize the development of our children, to prevent severe psychosocial maladjustment? What should we do when problems begin to appear, when pregnant mothers, or fathers themselves have

a long history of disorders? The answers to these questions obviously have an effect on the policies put forth by Québec government Ministries such as *ministères de la Famille et de l'Enfance* (Family and Child Welfare), *de l'Éducation* (Education), *de la Santé et des Services sociaux*, *de la Solidarité sociale* (Social Solidarity - formerly Income Security (Welfare)), *de la Sécurité publique* (Public Security), *de la Justice* (Justice), and *le ministère de la Recherche, Science et Technologie* (Research, Science and Technology).

The Contribution of ÉLDEQ 1998-2002

The Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002) was conceived in order to contribute to our knowledge of the development of children in their first 5 years of life. The main goal is to gain a better understanding of the factors, in the years of rapid growth, which lead to success or failure upon entry into the school system. The goal of the second phase (if approved) is to better understand development in elementary school, in light of development in early childhood.

We know that this survey cannot be a definitive one on child development in Québec, but it is the first representative study of a provincial cohort of children who will be measured annually from birth to entry into the school system. It specifically aims at understanding the development of basic skills needed for educational success.

Although the effort to set up this study began in 1989, the first data collection coincided with the Québec government's implementation of its *Politique Familiale* (Policy on Families). The policy has virtually the same objectives as our study:

> "These services for children 5 years and under should give all Québec children, whatever the socioeconomic status of their parents, the chance to acquire and develop the skills that will allow them to succeed in school (1997, p. 10)."

On March 3 1999, in the speech opening the 36th session of the Québec legislature, Premier Lucien Bouchard confirmed that early childhood development was a priority for the government:

> "The theme that will dominate our actions this year, next year, and throughout our mandate, is youth... The priority...with regards to youth in Québec, begins with the family and childhood... This massive investment in early childhood... will give our children the best chance of success in the short, medium and long terms. It is our best asset against alienation and despair. It is our best preparation for personal, social and economic success."

Because of this historic coincidence, ÉLDEQ has the potential of becoming an invaluable tool for monitoring the effects of Québec's massive investment in early childhood which began in 1997. Thanks to the data collected by the federal government's National Longitudinal Study of Children and Youth (NLSCY, Canada), we will be able to compare child development in Québec with that elsewhere in Canada, before and after the implementation of Québec's new policy on the family.

However, our initial objectives are more modest. The 12 or 13 papers in this series present the results of our first annual data collection. They describe the characteristics of the families and children when the latter were 5 months old.[3] They cover sociodemographic characteristics, nature of the birthing process, health and social adaptation of the parents, family and couple relations, parent-infant relations, and characteristics of the 5-month-old, such as sleep, diet, oral hygiene, temperament, and motor, cognitive and social development. These data will eventually be compared to those on children the same age collected by the NLSCY in 1994 and 1996.

An Interdisciplinary, Multi-University Team of Researchers

This study saw the light of day because of the collaboration of many people. In the preceding pages, Mireille Jetté thanked a number of them. I would like to take advantage of this introduction to emphasize that the survey was set up and continues forward because of the dedication and hard work of a group of researchers from a variety of disciplines and universities. I would particularly like to thank Michel Boivin, School of Psychology at Laval University, and Mark Zoccolillo, Department of Psychiatry at McGill University,

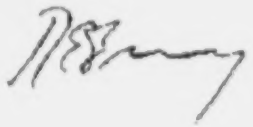
---

3. To simplify the text in this report, the phrase "5-month-old infants" will be used to refer to infants whose mean age was 5 months during data collection in 1998. In section 3.1.3 (Volume 1, Number 1), we explain why the infants were not all exactly the same age. As indicated in no. 2 of this series, 52% of the infants were less than 5 months, and 3.4% were 6 months of age or over.

who have been actively involved in this project since 1992. It was in that year that we prepared out first grant application for the Social Sciences and Humanities Research Council of Canada. A second group of researchers joined the team in 1993 and 1994: Ronald G. Barr, pediatrician, Montréal Children's Hospital Research Institute, McGill University; Lise Dubois, dietitian and sociologist, Laval University; Nicole Marcil-Gratton, demographer, University of Montréal and Daniel Pérusse, anthropologist, University of Montréal. Jacques Montplaisir, Department of Psychiatry, University of Montréal, joined the team in 1995. Louise Séguin, Department of Social and Preventive Medicine, University of Montréal and Ginette Veilleux, *Direction de la santé publique de la Régie régionale de la santé et des services sociaux de Montréal-Centre* (Public Health Department, Montréal-Centre Regional Health Board), joined in 1998. Three post-doctoral researchers have also made an important contribution. Raymond Baillargeon developed the task for measuring cognitive development. Christa Japel is the assistant to the scientific director for planning, analysis and presentation of the results. Heather Juby collaborates in the analysis of the data on couple and family history.

A Unique Confluence of Circumstances

A study such as this requires the coordination of many researchers over many years, enormous financial resources, and a long period of preparation. Though in the early 1990s the research team was convinced of the need for the survey, those responsible for the public purse had also to be convinced. We must therefore acknowledge the happy confluence of circumstances that allowed the players to take advantage of the opportunity at hand. When a number of civil servants in the *ministère de la Santé et des Services sociaux* understood the essential role of prevention, the creation of a committee on children and youth in 1991 led to an increased awareness of the importance of early childhood. At the same time, the president of the *CQRS*, Marc Renaud, had come to the same realization with his colleagues in the Population Health Program at the Canadian Institute for Advanced Research (CIAR). Aline Émond, the Director of *Santé Québec*, was ready to apply her formidable determination to work for the cause. For their part, Health Minister Jean Rochon and his Assistant Deputy Minister for Public Health, Christine Colin, aware of the importance and benefit of longitudinal studies on early childhood development, authorized the investment of large sums of money during a period of draconian budget cuts. This occurred at the same time as the federal government decided to create its own longitudinal study of children and youth (NLSCY). It is in this context that ÉLDEQ 1998-2002 materialized. Our survey also came to fruition because Mireille Jetté did everything in her power to make the researchers' dreams a reality, and Daniel Tremblay gave her all the support she needed by making various resources available for the project.



Richard E. Tremblay, Ph.D., M.S.R.C.
Chair of Child Development
University of Montréal

Table of contents

PART I • PARENTING PERCEPTIONS AND BEHAVIOURS

1. Introduction 21

2. Constructing the PPBS 23

3. The PPBS and Profiles of the Mothers and Fathers of Québec Infants 25

3.1 Factors Associated with Parenting Perceptions and Behaviours. 27
3.2 Variations in Parenting Perceptions and Behaviours Related to Family Characteristics 28
3.3 Variations in Parenting Perceptions and Behaviours by Parental Characteristics 30
3.4 Variations in Parenting Perceptions and Behaviours to the Related Characteristics of the Infant 32
3.5 Contribution of Risk Factors Retained to the Results of the PPBS 33

4. Conclusion 35

PART II • FAMILY ENVIRONMENT

1. Introduction 39

2. Family Functioning 41

2.1 Sociodemographic Characteristics 41
2.2 Parental and Family Characteristics 43

3. Parenting Practices 45

3.1 Sociodemographic Characteristics. 45
3.2 Parental and Family Characteristics 46

4. Observation of Family Life 47

4.1 Sociodemographic Characteristics 48
4.2 Parental and Family Characteristics 49

5. Conclusion 51

Bibliography 53

Glossary 59

List of Tables and Figures

Tables

Part I

3.1 Dimensions of the Parental Perceptions and Behaviours Regarding the Infant Scale (PPBS), 1998 25-26

3.2 Correlations Among the PPBS Dimensions for the Mothers (above the diagonal) and Fathers (below the diagonal), and Between the Mothers and Fathers (on the diagonal), 1998 27

3.3 Correlations Among the PPBS Dimensions and Difficult Temperament of the Infant as Perceived by the Parents, 1998 32

Figures

Part I

3.1 Mean Scores of Mothers and Fathers for Each Dimension of the PPBS, 1998 26

3.2 Mean Scores of Mothers for Each Dimension of the PPBS by Household Income, 1998 29

3.3 Mean Scores of Mothers for Each Dimension of the PPBS by Socioeconomic Status of the Family, 1998 30

3.4 Mean Scores of Mothers for Each Dimension of the PPBS by Type of Family, 1998 30

3.5 Perception of Parental Impact and Parental Overprotection in Mothers and Fathers by their Educational Levels, 1998 31

3.6 Mean Scores of Mothers for Each Dimension of the PPBS by their Immigrant Status, 1998 31

Part II

2.1 Distribution of Infants by the PMK's Evaluation of Family Functioning, 1998 41

2.2 Evaluation of Family Functioning by the PMK by Level of Household Income, 1998 42

2.3 Evaluation of Family Functioning by the PMK by Educational Level of the Mother, 1998 42

2.4 Evaluation of Family Functioning by the PMK by Type of Family, 1998 43

3.1 Distribution of Infants by Degree of Positive Interactions between the PMK and the Infant, 1998 45

3.2 Positive Interactions between the PMK and Infant by Number of Children Living in the Household, 1998 45

4.1 Distribution of Infants by Emotional and Verbal Capacities of the PMK as Evaluated by the Interviewer, 1998 47

4.2 Distribution of Infants by Degree of PMK's Stimulation and Evaluated by the Interviewer, 1998 47

4.3 Emotional and Verbal Capacities of the PMK and Degree of Infant Stimulation by Level of Household Income, 1998 48

4.4 Emotional and Verbal Capacities of the PMK and Degree of Infant Stimulation by Educational Level of the Mother, 1998 48

4.5 Emotional and Verbal Capacities of the PMK and Degree of Infant Stimulation by Type of Family, 1998 48

Review of the Methodology

This analytical paper is one of a series presenting cross-sectional data collected on a large sample of 5-month-old infants surveyed in 1998. It reports on the first of 5 annual data collections on 2,120 children in Québec who will be studied until they are 5 years old. In the first year of data collection, the results on 2,223 infants were retained.[4]

The target population of the survey is Québec babies, singleton births only,[5] who were 59 or 60 weeks of gestational age[6] at the beginning of each data collection period, born to mothers residing in Québec, excluding those living in the Northern Québec, Cree, and Inuit regions, and on Indian reserves, and those for whom the duration of pregnancy was unknown. Due to variations in the duration of pregnancy and the 4 or 5 weeks allotted for each data collection wave, the infants were not all exactly the same age (gestational or chronological) at the time of the survey. Therefore, the children in Year 1 (1998) of the survey had a mean gestational age of 61 weeks - about 5 chronological months.

The survey had a stratified, three-stage sampling design, with a mean design effect for the proportions estimated at 1.3. To infer the sample data to the target population, each respondent was given a weight corresponding to the number of people he/she "represented" in the population. ÉLDEQ 1998 comprised eight main collection instruments which obtained data from the person who was closest to the baby (called the Person Most Knowledgeable - PMK), the spouse (married or common-law), the infant and the absent biological parent, if applicable. Given variation in the response rates to each instrument, three series of weights had to be calculated to ensure inferences to the population were accurate. Except for the Self-Administered Questionnaire for the Absent Father (SAQFABS) and a series of questions in the Computerized Questionnaire Completed by the Interviewer (CQCI) on absent fathers - the overall or partial response rates of which were too high - the results of all the instruments could be weighted. Therefore, the data presented here have all weighted to reduce the biases.

All data that had coefficients of variation (CV) 15% or higher are shown with one or two asterisks to clearly indicate the variability of the estimate concerned. In addition, if the partial non-response rate was higher then 5%, there is a note specifying for which sub-group of the population the estimate is less accurate.

Similar to any cross-sectional population study, the Year 1 part (5-month-old infants) of ÉLDEQ 1998-2002 has certain limits. However, the vast majority of the results are valid and accurate, and provide a particularly detailed portrait, for the first time, of 5-month-old infants in Québec.

Note to the reader: For more details on the methods, see Volume 1, Number 1 in the present series. Detailed information on the sources and justification of the instruments used in Year 1 of ÉLDEQ 1998-2002, and the design of the scales and indices used in this paper, are covered in Number 12, entitled "Concepts, Definitions and Operational Aspects."

---

4. Though the results for 2,223 children were retained for the first year of data collection, 2,120 will be retained for the rest of the longitudinal study; the extra 103 were part of an over-sample used to measure the effects of the January 1998 ice storm.

5. Twins (twins births) and other multiple births were not targeted by the survey.

6. Gestational age is defined as the sum of the duration of gestation (pregnancy) and the age of the baby.

Parenting and Family Relations

Part I

Parenting Perceptions and Behaviours

1. Introduction

Being a parent is certainly one of the most demanding social roles in terms of the mental, physical and emotional involvement. It requires a significant commitment on the part of adults to not only feed, protect, care for, instruct and rear, but also listen to, reassure, comfort and entertain their child for whom they are responsible, and do this for many years. It is a job that requires time and energy, and has become more complicated and difficult to achieve given the demands of current societal organization. These demands are associated with unprecedented access of both spouses to the labour market and increasing instability in conjugal unions, which translate into the growth of single parenthood and new configurations of the family.

In spite of the demands and complexity of parenting, most parents have the physical and psychological capacity to not only face the challenge of caring for one or more children, but also to derive great pleasure from it. However, a minority of parents encounter difficulties in adequately fulfilling their role. Their behaviours may therefore be less appropriate for the development of their children. They may find themselves overwhelmed by the weight of the responsibility, or certain personal, family or external situations may present significant constraints to fulfilling their role as parent. Some parents may also lack parenting skills or perceive themselves as having little impact on their child's development. Inasmuch as these parenting behaviours can have a positive or negative influence on child development, it is necessary to document these as early as possible in the child's life in order to better understand the mechanisms involved and intervene in an appropriate manner. Therefore it appeared pertinent to examine certain parenting perceptions and behaviours as part of this longitudinal survey.

Parenting behaviours are generally perceived as the cornerstone of socio-emotional development in young children (Bornstein, 1995). In fact, various theories have been advanced to describe and explain the mechanisms through which these behaviours, particularly those of the mother, contribute to child development (Bugenthal & Goodnow, 1998; Parke & Buriel, 1998; Thompson, 1998). In the course of early childhood, parental sensitivity, namely the capacity of the parent to detect the child's needs and respond to them promptly and appropriately, likely contributes to the establishment of a secure parent/child relationship (attachment) during the second year of life, thereby creating a context that fosters the future socio-emotional development of the child (Bowlby, 1982; Bretherton & Waters, 1985; De Wolff & Van Ijzendoorn, 1997; Isabella, 1995). Inconsistency in parental responses, as well as a tendency to adopt strongly restrictive and punitive strategies, is likely associated with the development of an insecure attachment and future behavioural problems in the child (Crittenden, 1988; Lyons-Ruth *et al*, 1990, 1991).

Studies conducted on older children suggest that inconsistent parenting behaviours characterized by intrusiveness and overprotection can contribute to the development of a feeling of absence of control and create anxiety in the child (Chorpita & Barlow, 1998). A cold, "controlling" rearing style may play a role in the development of depression, agoraphobia and social phobia (Arrindell *et al.*, 1989; Parker, 1984; Parker & Lipscombe, 1981), while inconsistency and rigidity in discipline, along with inadequate punishment for inappropriate behaviour, may induce the young child to adopt aggressive behaviours (Patterson *et al.*, 1992). In contrast, a warm, non-intrusive, yet firm approach to discipline is likely associated with healthy emotional, social and cognitive development, particularly in boys (Baumrind, 1997, 1991). In brief, it seems that many aspects of parenting behaviours may be involved in socio-emotional development in early childhood and that certain practices, especially those involving punishment and overprotection, may be associated with developmental problems in children.

Furthermore, parents' perceptions of their role, notably beliefs concerning their ability to accomplish their task as a parent and expectations as to the impact of their actions (Bandura, 1989), may be at the heart of parenting competence and parent-child dynamics in early childhood (Parke & Buriel, 1998; Teti & Gelfand, 1991; Thompson, 1998). Bandura (1989) emphasizes that an individual's beliefs in self-efficacy and expectation of positive outcomes of his actions are the primary determinants of accomplishing a given task. These concepts have been successfully applied to the context of parenting behaviours.

In general, current research considers well-founded the association between parental self-efficacy and specific parenting skills such as the capacity to understand and respond to infant signals (Donovan *et al.*, 1990), sensitive, stimulating and non-

punitive parenting behaviours (Donovan & Leavitt, 1985) and a more direct and active involvement with the infant (Mash & Johnston, 1983). Self-efficacy has also been associated with behavioural competence observed in parents, independent of sociodemographic characteristics, maternal depression, spousal support and child temperament (Teti & Gelfand, 1991). Parents who believe they can influence the development of their child and can successfully accomplish certain tasks tend to be more involved in interacting with their child (Parks & Smeriglio, 1986; Smeriglio & Parks, 1983; Tulkin & Cohler, 1973). Conversely, parents who have lower feelings of self-efficacy tend to perceive the infant as being difficult (Bugenthal & Shennum, 1984; Gibaud-Wallson & Waudersman, cited in Johnston & Mash, 1989; Halpern *et al.*, 1994) and become irritated when they interact with a child who responds less to stimulation (Bugenthal & Shennum, 1984). They feel more depressed (Cutrona & Troutman, 1986; Teti & Gelfand, 1991) and less competent as parent (Donovan *et al.*, 1990). They also tend to be more passive (Wells-Parker *et al.*, 1990) and use punitive strategies with the child (Bugenthal & Shennum, 1984). Finally, it has been observed that abusive and negligent mothers have unrealistic expectations of their child (Azar *et al.*, 1984) and report less satisfaction and efficacy as a parent compared to those who are not abusive (Mash *et al.*, 1983).

It is clear that parenting perceptions and behaviours are at the core of current knowledge on the socialization of children. Many of the aforementioned studies used direct observations of mother-child interactions, often coded in minute detail (*i.e.* frequency and duration of precisely-defined behaviours), to study various aspects of parenting behaviours. This type of approach is impossible in a large-scale population study such as ÉLDEQ 1998-2002. This is why the Parental Perceptions and Behaviours Regarding the Infant Scale (PPBS) was developed.

The scale is based on statements of the parents regarding certain perceptions and behaviours which reflect the quality of their interaction with their 5-month-old infant. Its goal is to assess the dimensions likely associated with actual parenting behaviours, and to study their role in the development of internalized and externalized problems in children over the course of the longitudinal study.[7] Ideally, this scale should also be sensitive to the context of within family relationships, that is, likely to vary according to which infant is being measured in the family.[8] Though many self-administered questionnaires have been used to measure parenting perceptions and/or behaviours (Abidin, 1986; Deutsch *et al.*, 1988; Dumka *et al.*, 1996; Thomasgard *et al.*, 1995; Wells-Parker *et al.*, 1990), they were often concerned with parental behaviours towards older children or covered a wide range of ages. In other cases, these questionnaires covered subjects which were too general and quite different from the dimensions judged to be relevant for ÉLDEQ.

Six cognitive and behavioural dimensions were measured by the scale. These were parental self-efficacy, perception of impact of parenting behaviours, tendency to coercion, tendency to be overprotective, parental affection and perception of the general qualities of the infant. The first two dimensions cover parents' beliefs regarding their role in caring for the baby, while the second two refer to self-reported parenting behaviours. The fifth, parental affection, reflects the pleasure and warmth parents feel and show in their interactions with the child. The sixth dimension concerns the parent's perception of the infant's qualities, namely physical attractiveness and intelligence.

---

7. Externalizing problems are manifested themselves in the form of aggressivebehaviours, violence or other disturbing behaviours that are easily observable, such as attention deficit disorder with hyperactivity, defiance and conduct disorder. Internalized problems rather refer to internal forms of distress, such as feelings of depression, anxiety, somatic complaints and non-communication.

8. Parenting perceptions and behaviours can vary with respect to the parents, that is by family unit (between-family variation). They can also vary within the family, as a function of the children concerned (within family variation). It is important to distinguish these two sources of variation in order to separate factors associated to the infant from those associated with the parents and family as a unit. In a study being conducted in parallel with ÉLDEQ, the *Étude des jumeaux nouveau-nés du Québec* (Québec Study of Newborn Twins), parents responded to the PPBS questions for each 5-month-old twin, which allowed separating the sources of explanation.

The current version of the scale is the result of a process of selecting relevant items.[9] The 32 items used in Year 1 (1998) of ÉLDEQ were part of the SAQM (Self-Administered Questionnaire for the Mother) and SAQF (Self-Administered Questionnaire for the Father), filled out separately by both parents of the 5-month-old infant. For each statement, the parent responded on a 10-point Likert-type scale ("0 = Not at all" to "10 = Exactly") according to the degree of what he/she did, thought or felt with regards to his/her infant.

This paper presents a portrait of parenting perceptions and behaviours as measured in ÉLDEQ 1998, when the infants were 5 months of age. First the chosen dimensions will be described, then the profiles of the parents with regards to each one. Secondly, the degree to which the parents' attitudes and behaviours were associated with certain characteristics of the household, parents, and infant will be examined. Most of the characteristics retained, which are described and justified later in this paper, have been previously identified as risk factors associated with the quality of parenting and the development of behavioural problems in children. It should be emphasized that the expected associations were quite modest, since it is possible that at 5 months of age, infants' characteristics as well as parental perceptions and behaviours have not yet crystallized. It should also be noted that a significant proportion of the mothers were still at home, and therefore in a very different context from the one they will be in when they have returned to work.

---

9. An initial list of 52 items was produced. Those related to self-efficacy were adapted from the scale created by Teti and Gelfand (1991). They were slightly modified to make them more relevant to the context of 5-month-old infants. The content validity of the items was evaluated by 15 experts - clinical and developmental psychologists, with considerable experience in parent/child interactions in the first year of life. They assessed the relevance of the contents of each item for the expected dimensions. Following this process, 26 items were retained. Six new ones on coercive behaviours and several others were added. A first version of 40 items was produced and presented to the first sample of mothers in the *Étude des jumeaux nouveau-nés du Québec* (Québec Study of Newborn Twins) . It was quickly reduced to 37, since some items were poorly understood by the mothers and presented ceiling effects (thereby demonstrating weak sensitivity). It was then administered to more than 500 mothers in a pilot study (Boivin *et al.*, 1997). A factor analysis confirmed the presence of the five anticipated dimensions. The affection dimension was not considered in this first version. Four of the dimensions - self-efficacy, coercion, overprotection and perception of the infant's qualities - presented an acceptable level of reliability (Cronbach alpha > 0.70); however, perceived impact was less reliable (Cronbach alpha = 0.51). Based on these results, a new version containing 32 items was developed for the actual study. The perceived impact scale was reconstructed and five items related to affection were added.

3. The PPBS and Profiles of the Mothers and Fathers of Québec Infants

A factor analysis conducted on the data collected from the mothers (the number of respondents varied between 2,097 and 2,138 according to the questions, for a total of 2,223 households visited.) revealed six dimensions.[10] However, three items related to affection presented significant loadings (> 0.30) on the factor of parental self-efficacy.

The analysis conducted on data gathered from the fathers (the number of respondents varied between 1,819 and 1,849 according to the questions, for a total of 2,223 households visited) provided the same pattern of convergence, except for the items related to affection that were more strongly associated with parental self-efficacy than for the mothers.[11]

The six dimensions are described in Table 3.1. Parental self-efficacy refers to the ability to accomplish tasks related to fulfilling the role of parent (the items retained were formulated on the basis of those suggested by Teti and Gelfand, 1991). Perceived parental of impact refers to the parent's evaluation of the effect of his behaviour on the development of his child. The tendency to coercion refers to the proclivity to respond in a hostile and restrictive manner to difficult behaviours in the baby, revealing a lack of sensitivity to his needs and moods. Affection refers to the pleasure and warmth felt and shown by the mother or father when interacting with the infant. Overprotection refers to behaviours reflecting excessive concern for the safety and protection of the child, which can lead to intrusive behaviours fostering dependency. Finally, the perception of the general qualities of the infant refers to the parent's perception of his physical attractiveness and cognitive abilities.

Table 3.1
Dimensions of the Parental Perceptions and Behaviours Regarding the Infant Scale (PPBS), 1998

Dimensions	Questions
Feeling of self-efficacy	• I feel that I am very good at keeping my baby amused. • I feel that I am very good at calming my baby down when he/she is upset, fussy or crying. • I feel that I am very good at keeping my baby busy while I am doing other things. • I feel that I am very good at attracting the attention of my baby. • I feel that I am very good at feeding my baby, changing his/her diapers, and giving him/her a bath. • In general, do you think you are "a good mother/a good father"?
Perception of impact	• My behaviour has little effect on the personal development of my baby. • Regardless of what I do, my baby will develop on his/her own. • My behaviour has little effect on the intellectual development of my baby. • My behaviour has little effect on the development of emotions (for example, happiness, fear, anger) in my baby. • My behaviour has little effect on how my baby will interact with others in the future.
Tendency to Coercion	• I have been angry with my baby when he/she was particularly fussy. • When my baby cries, he/she gets on my nerves. • I have raised my voice with or shouted at my baby when he/she was particularly fussy. • I have spanked my baby when he/she was particularly fussy. • I have lost my temper when my baby was particularly fussy. • I have left my baby alone in his/her bedroom when he/she was particularly fussy. • I have shaken my baby when he/she was particularly fussy.

see at the next page

10. A principal component analysis with VARIMAX rotation was conducted. The factor loadings observed were higher than 0.30 for the anticipated factor and lower than 0.30 for the other factors (data not shown).

11. On the whole, the six dimensions had an acceptable level of reliability (Cronbach alphas varied from 0.68 to 0.78 in mothers and 0.69 to 0.79 in fathers).

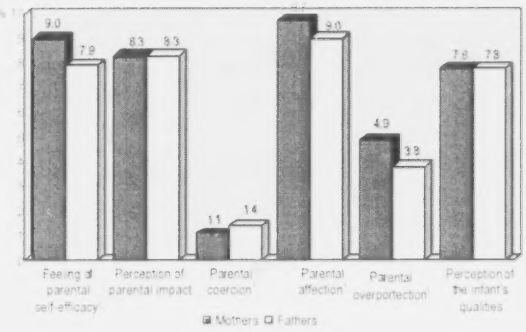
Affection	• I take really great pleasure in "talking" (babbling, using baby-talk) with my baby. • I often play with my baby. For example, I regularly take the time to amuse him/her or make him/her laugh when I change his/her diaper. • I often feel the urge to kiss my baby. • I usually feel great pleasure when holding my baby in my arms. • I feel a very intense joy and I sort of "melt down" whenever my baby smiles at me.
Dimensions	**Questions**
Overprotection	• I insist upon keeping my baby close to me at all times, within my eyesight and in the same room as I am. • I consider myself a "real mother hen." • I prefer that my baby sleeps in the same room as me at night. • When I leave my baby with a baby-sitter, I miss him/her so much that I cannot enjoy myself. • I can never bring myself to leave my baby with a baby-sitter.
Perception of the child's qualities	• I get the impression that my baby is particularly curious compared with other children his/her age. • I get the impression that my baby is particularly endearing compared with other children his/her age. • I get the impression that my baby is particularly cute compared with other children his/her age. • I get the impression that my baby is particularly intelligent compared with other children his/her age.

Source : *Institut de la statistique du Québec, ELDEQ 1998-2002.*

The distribution of the scores (data not shown) indicates that of the six dimensions retained, only the tendency to overprotection had a normal distribution, with a mean of 4.9 (s.d. = 2.3) for the mothers and 3.82 (s.d. = 2.3) for the fathers. All the other dimensions had distributions characterized by a positive bias, such as parental self-efficacy, or a negative bias, such as the tendency to coercion. However, in nearly all of these distributions, the range and variability of the scores put the vast majority of respondents inside the limits of the scale, namely between 0 and 10. Only parental affection was the exception. Indeed, 60% percent of the mothers and 29% of the fathers obtained a maximum mean of 10 on the affection scale, which indicates a level peaking of the scores and the low sensitivity of the scale.

The means observed for the mothers and fathers are presented in Figure 3.1. On the whole, both perceived themselves as rather effective parents, believed their behaviours were having a significant impact on the development of their child, reported that they only rarely resorted to coercive behaviours, indicated feeling and showing a lot of affection towards their child, and tended to perceive their child as being more physically attractive and more intelligent than other children the same age. With regards to the tendency to overprotection, mothers and fathers presented less polarized scores overall, demonstrating that they occasionally had overprotective behaviours. It is noteworthy that mothers were significantly different from fathers in most of the dimensions. They reported higher self-efficacy, more affection, overprotection and less coercive behaviours than the fathers. There was no difference between mothers and fathers in terms of perception of impact or perception of the infant's qualities.[12]

Figure 3.1
Mean Scores of Mothers and Fathers for Each Dimension of the PPBS, 1998



1. $p < 0.001$.

Source : *Institut de la statistique du Québec, ELDEQ 1998-2002.*

The correlations among the six dimensions of parenting perceptions and behaviours are presented in Table 3.2. Two aspects draw attention here: the correlations between mother and father assessments located on the diagonal, and the sub-scale

12. The data from a number of ELDEQ scales did not show a normal distribution. In all cases where mean comparison tests were applied, chi-square tests were conducted to confirm the results. These categorized the variables related to the scales into three relatively equal categories (tertiles). The analyses confirmed the trends observed by comparing the means. In general, the level of significance observed in the mean comparison tests were close to those obtained in the chi-square tests.

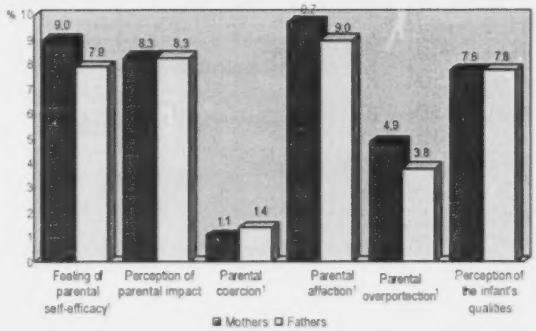
Affection	• I take really great pleasure in "talking" (babbling, using baby-talk) with my baby. • I often play with my baby. For example, I regularly take the time to amuse him/her or make him/her laugh when I change his/her diaper. • I often feel the urge to kiss my baby. • I usually feel great pleasure when holding my baby in my arms. • I feel a very intense joy and I sort of "melt down" whenever my baby smiles at me.
Dimensions	**Questions**
Overprotection	• I insist upon keeping my baby close to me at all times, within my eyesight and in the same room as I am. • I consider myself a "real mother hen." • I prefer that my baby sleeps in the same room as me at night. • When I leave my baby with a baby-sitter, I miss him/her so much that I cannot enjoy myself. • I can never bring myself to leave my baby with a baby-sitter.
Perception of the child's qualities	• I get the impression that my baby is particularly curious compared with other children his/her age. • I get the impression that my baby is particularly endearing compared with other children his/her age. • I get the impression that my baby is particularly cute compared with other children his/her age. • I get the impression that my baby is particularly intelligent compared with other children his/her age.

Source : *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

The distribution of the scores (data not shown) indicates that of the six dimensions retained, only the tendency to overprotection had a normal distribution, with a mean of 4.9 (s.d. = 2.3) for the mothers and 3.82 (s.d. = 2.3) for the fathers. All the other dimensions had distributions characterized by a positive bias, such as parental self-efficacy, or a negative bias, such as the tendency to coercion. However, in nearly all of these distributions, the range and variability of the scores put the vast majority of respondents inside the limits of the scale, namely between 0 and 10. Only parental affection was the exception. Indeed, 60% percent of the mothers and 29% of the fathers obtained a maximum mean of 10 on the affection scale, which indicates a level peaking of the scores and the low sensitivity of the scale.

The means observed for the mothers and fathers are presented in Figure 3.1. On the whole, both perceived themselves as rather effective parents, believed their behaviours were having a significant impact on the development of their child, reported that they only rarely resorted to coercive behaviours, indicated feeling and showing a lot of affection towards their child, and tended to perceive their child as being more physically attractive and more intelligent than other children the same age. With regards to the tendency to overprotection, mothers and fathers presented less polarized scores overall, demonstrating that they occasionally had overprotective behaviours. It is noteworthy that mothers were significantly different from fathers in most of the dimensions. They reported higher self-efficacy, more affection, overprotection and less coercive behaviours than the fathers. There was no difference between mothers and fathers in terms of perception of impact or perception of the infant's qualities.[12]

Figure 3.1
Mean Scores of Mothers and Fathers for Each Dimension of the PPBS, 1998



1. $p < 0.001$.

Source : *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

The correlations among the six dimensions of parenting perceptions and behaviours are presented in Table 3.2. Two aspects draw attention here: the correlations between mother and father assessments located on the diagonal, and the sub-scale

12. The data from a number of ÉLDEQ scales did not show a normal distribution. In all cases where mean comparison tests were applied, chi-square tests were conducted to confirm the results. These categorized the variables related to the scales into three relatively equal categories (tertiles). The analyses confirmed the trends observed by comparing the means. In general, the level of significance observed in the mean comparison tests were close to those obtained in the chi-square tests.

correlations for the mothers above the diagonal and for the fathers below the diagonal. Moderate correlations were observed between mothers and fathers in terms of overprotection (r = 0.48) and coercion (r = 0.33), perception of the infant's qualities (r = 0.36) and perception of impact (r = 0.34; in all cases $p < 0.001$). Significant, but weaker correlations were obtained for affection (r = 0.27; $p < 0.001$) and self-efficacy (r = 0.22; $p < 0.001$).[13]

Table 3.2
Correlations Among the PPBS Dimensions for the Mothers (above the diagonal) and Fathers (below the diagonal), and Between the Mothers and Fathers (on the diagonal), 1998[1]

	Self-Efficacy	Impact	Coercion	Affection	Overprotection	Qualities
Self-Efficacy	**0.22**	0.7	-0.23	0.54	0.12	0.38
Impact	0.16	**0.34**	-0.16	0.13	-0.23	0.08
Coercion	-0.23	-0.16	**0.33**	-0.15	-0.10	-0.02
Affection	0.65	0.20	-0.21	**0.27**	0.10	0.37
Overprotection	0.18	0.19	-0.15	0.22	**0.48**	0.15
Qualities	0.40	0.10	-0.12	0.40	0.19	**0.36**

1. All correlations higher than 0.07 were significant at the 0.05 threshold. The weighted sample varied from 2,117 to 2,138 for the mothers (above the diagonal), 1,826 to 1846 for the fathers (below the diagonal) and 1,807 to 1,834 for the mother/father correlations (on the diagonal).

Source : *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

In general, the subscale correlations indicated that the scores were weakly or moderately related (Table 3.2). However, strong correlations were observed between affection and parental self-efficacy (r = 0.54 and 0.65; $p < 0.001$). Parents who saw themselves as more effective showed more pleasure and affection in their interactions with the infant. These strong correlations were consistent with the factor analyses presented earlier. Moderate correlations were also found between affection and perception of the infant's qualities (r = 0.37 and 0.40; $p < 0.001$), between perception of the infant's qualities and self-efficacy (r = 0.38 and 0.40; $p < 0.001$), and to a lesser degree, between self-efficacy and coercion (r = -0.23 and -0.23; $p < 0.001$). The more the parents highly perceived the qualities of their infant compared to other infants the same age, the more they derived pleasure and felt affection in their interactions with him. The more they perceived themselves as effective parents, the more they perceived high qualities in their infant, and the less they revealed resorting to hostile and restraining behaviours when confronted with difficult behaviour on his part.

On the whole, the results of this study confirm the utility of the PPBS. It provided a coherent factor structure and the scores showed a good degree of reliability. Although the correlations were weak or moderate, the general pattern of results was not only coherent theoretically, but also comparable across parent. Furthermore, with the exception of the strong correlation between affection and parental self-efficacy, there was little redundancy among the scales. Given the limited sensitivity of the affection scale and its very strong relation with self-efficacy, it was not included in the following analyses.

3.1 Factors Associated with Parenting Perceptions and Behaviours

To clearly understand the role of parental perceptions and behaviours in the dynamics of the parent/child system, it is necessary to disentangle the complex web of their determinants and the relations among these determinants. Through the longitudinal study of these children, it will be possible to not only identify the main factors associated with parental perceptions and behaviours, but more importantly, to understand the mechanisms by which these factors, perceptions and behaviours interact to influence child development. For example, economic hardship and negative life experiences have been associated with punitive, inconsistent and inappropriate parental behaviours as well as behavioural problems in children (Conger *et al.*, 1992, 1993; Dix, 1991; McLoyd, 1998). However, very little is known about the mechanisms that account for these associations. Can they be explained by certain characteristics of the parents such as educational level, or are they rather the product of a mechanism of influence by which socioeconomic hardship leads to psychological

13. Tests on the Pearson correlation coefficients were conducted even though many scores on the PPBS presented abnormal and strongly biased distributions. In addition, given the very large number of correlations and linear regressions calculated (see the following sections), the basic assumptions associated with using linear regression analyses were not systematically verified. Consequently, the coefficients with weak values are presented for descriptive purposes only.

distress, which in turn affects parental behaviours and child development? Are there factors which can moderate this influence, such as social support or infant temperament?

In order to test such explanatory models, it is necessary to consider a variety of factors associated with parenting perceptions and behaviours - those related to the infant's and parents' characteristics, and those derived from the family and socioeconomic context. Infants can differ in temperament and parents may adopt certain behaviours in response to the characteristics they perceive (Lytton, 1990). Hyperactivity in the child can result in a high level of irritability, excessive crying and poor distress management. The disorganized character of these behaviours and the additional demand for attention generated is more likely to irritate some parents (Frodi *et al.*, 1978; Rubin *et al.*, 1990), especially in stressful situations, affect their perceived parental competence, and lead them to behaviours that limit the child's his autonomy and exploration of the environment.

The affective state of parents can also influence the quality of parent/child relationships (Conger *et al.*, 1994; Dix, 1991). Psychological distress, maternal depression in particular, has been correlated with physical abuse, coercive strategies, a lack of maternal sensitivity and parental dissatisfaction (McLoyd, 1998). The stress associated with psychological distress may restrict a parent's capacity for attention and reduce his/her ability to process information (Whaler & Dumas, 1989). Because they are preoccupied, depressed parents may have a tendency to lack attentiveness and ignore their children's demands for attention, who then increase the intensity of their demands (Cox *et al.*, 1992; Dix, 1991).

Adolescent parenthood may be another risk factor associated with dysfunctional parenting behaviours (Brooks-Gunn & Chase-Landsdale, 1995), notably in terms of controlling affect and emotional availability (Osofsky *et al.*, 1993). Furthermore, since they engage the parents' belief system and their socialization goals, parenting perceptions and behaviours may vary with cultural factors and educational level.

Moreover, many studies show associations between negative life situations and events and psychological distress manifested in the form of depression, anxiety, hostility, eating and sleep disorders in parents and children (for a review, see McLoyd, 1998). A restrictive, punitive and emotionally distant parenting style has been associated with stressful and undesirable life experiences such as divorce and conjugal conflict (Patterson & Capaldi, 1991). Mothers undergoing stressful experiences are less attentive to their children, and in the case of single parents, are less comfortable and spontaneous, and less likely to respond appropriately to the demands of their children (Weinraub & Wolf, 1983).

Socioeconomic status has often been used as a general "marker" for a range of disadvantaged circumstances (low educational level, single parenthood, frequent changes in family structure, unstable employment), which in addition to insufficient income, negatively affect the psychological well-being of parents and their parenting behaviours (Conger *et al.*, 1992, 1994). Indeed, many studies have shown that parents of low SES families are more likely than those with higher SES to use excessive and restrictive disciplinary techniques and resort more often to disapproval and punishment as a means of enforcing discipline. They place a high value on obedience, and give no support to the child (Hart & Risley, 1995; Kelley *et al.*, 1993; McLoyd, 1998).

In summary, it is clear that a comprehensive study of parenting perceptions and behaviours should take into account a variety of factors related to the infant, the parent and the family context. Therefore, the scores were submitted to a series of univariate analyses, namely t tests and ANOVAS, followed by multiple comparison tests and Pearson correlations, to examine variations according to certain characteristics of the household, parent and infant. However, caution should be observed here. Since the analyses were exploratory, a rather liberal strategy was used in choosing the criterion for statistical significance, namely $p < 0.05$. In such a large sample, a correlation as weak as 0.06 is considered statistically significant. In addition, the multiple use of univariate tests increases the probability of error. These choices therefore suggest prudence in interpreting the results, particularly when the associations observed are weak.

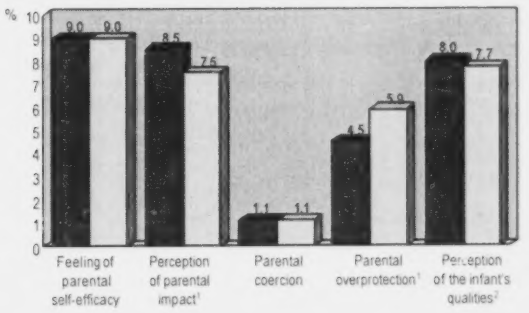
3.2 Variations in Parenting Perceptions and Behaviours Related to Family Characteristics

Five family characteristics were included in the analysis: insufficient income, socioeconomic status, type of family, spousal/partner support and birth order. Insufficient income was calculated according to a procedure suggested by *la Direction Santé Québec*

of the *Institut de la statistique du Québec*. It was based on the low-income cut-off (LICO) set by Statistics Canada for the reference year 1997. It takes into account the size of the household and the region where it is located. Socioeconomic status is an indicator which combines the occupational prestige, educational level and financial situation of the infant's parents.[14] Families were classified into quintiles by their rank on the socioeconomic index. The type of family distinguishes single-parent, intact two-parent and stepfamilies. Spousal/partner support measures the degree of emotional support perceived by the mother, but also that involved in taking care of the baby and doing household chores (see No. 11 in this series of papers). Finally, families were categorized by whether the infant was or was not the only child in the family.

As shown in Figure 3.2, mothers in families with insufficient income reported having less impact on their infant's development, reported resorting more frequently to overprotective behaviours, and had a lower perception of the physical and cognitive qualities of their infant compared to mothers with higher incomes. No difference was found with regards to self-efficacy and coercive behaviours. Except for the perception of the infant's qualities, the same trends were observed in the fathers (data not shown).

Figure 3.2
Mean Scores of Mothers for Each Dimension of the PPBS by Household Income, 1998



1. $p < 0.001$.
2. $p < 0.01$.

Source : *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

14. For more details on this and the preceding measurement, see Numbers 2 and 12 in this series of analytical papers.

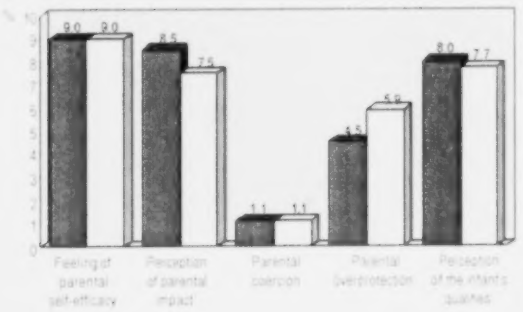
Similar trends were found with respect to the socioeconomic status. This was not surprising given the strong correlation between this variable and insufficient income ($r = -0.57$; $p < 0.001$). As revealed in Figure 3.3, the most important variations emerged for parental impact and overprotection. Mothers in households in the lower quintiles perceived having less impact on the development of their child and reported more overprotective behaviours than those in the higher quintiles, the differences following a rather uniform gradient. Other significant, though more marginal, differences were also observed. Mothers in the lowest quintile felt slightly more effective as parents than those in the highest quintiles (4th and 5th), whereas those in the highest tended to perceive the physical and cognitive qualities of their infants slightly more than those in the lowest quintiles (1st and 2nd). It is interesting to note that the mothers at the two extremities of the SES indicator showed no difference in coercive behaviours. Only mothers in the highest quintile were slightly different from the second and third in terms of this variable. It is important to note that some of these results may be associated with employment status. Mothers in the lower quintiles were less likely than those in the higher ones to be working at the time of the survey (data not shown). It will be interesting to verify if these same trends will be found after the next round of data collection, when a larger number of mothers will be returning to the labour market.

It is noteworthy that the same analyses conducted on the fathers' perceptions and behaviours confirmed clear SES differences in terms of perceived parental impact and overprotection. In contrast, no difference was observed with regards to self-efficacy and coercion. Fathers in the highest quintile had a more favourable perception of the qualities of their child than those in the second quintile, but this was the only difference revealed (data not shown).

of the *Institut de la statistique du Québec*. It was based on the low-income cut-off (LICO) set by Statistics Canada for the reference year 1997. It takes into account the size of the household and the region where it is located. Socioeconomic status is an indicator which combines the occupational prestige, educational level and financial situation of the infant's parents.[14] Families were classified into quintiles by their rank on the socioeconomic index. The type of family distinguishes single-parent, intact two-parent and stepfamilies. Spousal/partner support measures the degree of emotional support perceived by the mother, but also that involved in taking care of the baby and doing household chores (see No. 11 in this series of papers). Finally, families were categorized by whether the infant was or was not the only child in the family.

As shown in Figure 3.2, mothers in families with insufficient income reported having less impact on their infant's development, reported resorting more frequently to overprotective behaviours, and had a lower perception of the physical and cognitive qualities of their infant compared to mothers with higher incomes. No difference was found with regards to self-efficacy and coercive behaviours. Except for the perception of the infant's qualities, the same trends were observed in the fathers (data not shown).

Figure 3.2
Mean Scores of Mothers for Each Dimension of the PPBS by Household Income, 1998



1. $p < 0.001$
2. $p < 0.01$

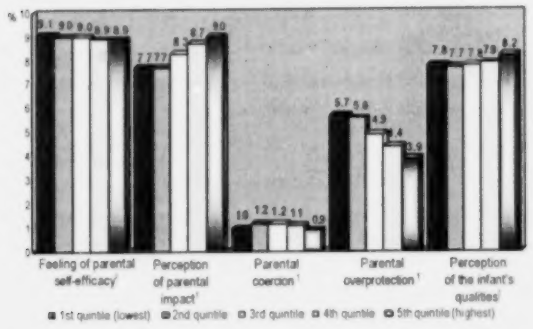
Source: *Institut de la statistique du Québec, ELDEQ 1998-2002.*

Similar trends were found with respect to the socioeconomic status. This was not surprising given the strong correlation between this variable and insufficient income ($r = -0.57$, $p < 0.001$). As revealed in Figure 3.3, the most important variations emerged for parental impact and overprotection. Mothers in households in the lower quintiles perceived having less impact on the development of their child and reported more overprotective behaviours than those in the higher quintiles, the differences following a rather uniform gradient. Other significant, though more marginal, differences were also observed. Mothers in the lowest quintile felt slightly more effective as parents than those in the highest quintiles (4th and 5th), whereas those in the highest tended to perceive the physical and cognitive qualities of their infants slightly more than those in the lowest quintiles (1st and 2nd). It is interesting to note that the mothers at the two extremities of the SES indicator showed no difference in coercive behaviours. Only mothers in the highest quintile were slightly different from the second and third in terms of this variable. It is important to note that some of these results may be associated with employment status. Mothers in the lower quintiles were less likely than those in the higher ones to be working at the time of the survey (data not shown). It will be interesting to verify if these same trends will be found after the next round of data collection, when a larger number of mothers will be returning to the labour market.

It is noteworthy that the same analyses conducted on the fathers' perceptions and behaviours confirmed clear SES differences in terms of perceived parental impact and overprotection. In contrast, no difference was observed with regards to self-efficacy and coercion. Fathers in the highest quintile had a more favourable perception of the qualities of their child than those in the second quintile, but this was the only difference revealed (data not shown).

14. For more details on this and the preceding measurement, see Numbers 2 and 12 in this series of analytical papers.

Figure 3.3
Mean Scores of Mothers for Each Dimension of the PPBS by Socioeconomic Status of the Family, 1998

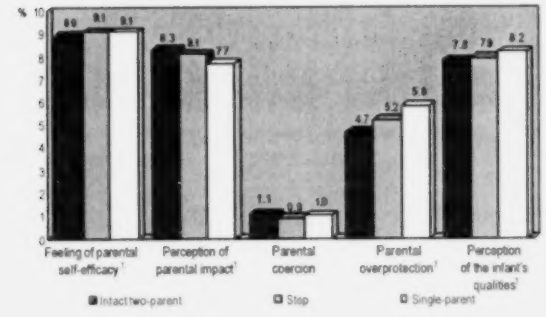


1. $p < 0.001$.

Source : *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

Compared to mothers in intact two-parent families, single-parent mothers perceived having less impact on the development of their child and showed more overprotective behaviours (the three types of families differed here) (figure 3.4). In addition, compared to mothers in intact two-parent families, single mothers perceived themselves as slightly more efficient and saw higher physical and cognitive qualities in their infants. No significant difference was observed, however, in coercive behaviour.

Figure 3.4
Mean Scores of Mothers for Each Dimension of the PPBS by Type of Family, 1998



1. $p < 0.001$.

Source : *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

Correlations between mother's perception of spousal/partner support and the perception and behaviour scores revealed a positive association between perceived spousal support and maternal self-efficacy ($r = 0.22$; $p < 0.001$) and paternal self-efficacy ($r = 0.32$; $p < 0.001$). It is of note that spousal support perceived by the mother had a stronger association with paternal self-efficacy than with maternal self-efficacy. This possibly reflects a stronger commitment on the part of some fathers to caregiving for their infant, which translates into a feeling of greater parental efficacy, and in turn, perception of better spousal support on the part of the mother. Other significant correlations emerged, although weaker. Spousal/partner support was positively associated with the perception of the infant's qualities ($r = 0.10$; $p < 0.001$ for the mothers and $r = 0.11$; $p < 0.001$ for the fathers) and negatively correlated with coercive behaviours ($r = -0.09$; $p < 0.001$ for the mothers and fathers). Perception of spousal support was also correlated, though weakly, with the perception of impact ($r = 0.08$; $p < 0.001$) and overprotection ($r = 0.07$; $p < 0.01$) in the fathers (data not shown).

Mothers and fathers of a singleton infant perceived greater physical and cognitive qualities in him than those who had more than one child (data not shown; mothers: 8.2 vs. 7.7; $p < 0.001$; fathers: 8.2 vs. 7.6; $p < 0.001$). Furthermore, the fact that the infant, for the moment at least, was the sole child in the family,[15] was associated with maternal behaviours which were slightly more coercive (1.2 vs. 1.0; $p < 0.01$) and overprotective (5.0 vs. 4.8; $p < 0.05$), a higher self-efficacy (8.2 vs. 7.8; $p < 0.001$) and, in the father, with a slightly higher perception of impact (8.4 vs. 8.2; $p < 0.01$) (data not shown).

3.3 Variations in Parenting Perceptions and Behaviours by Parental Characteristics

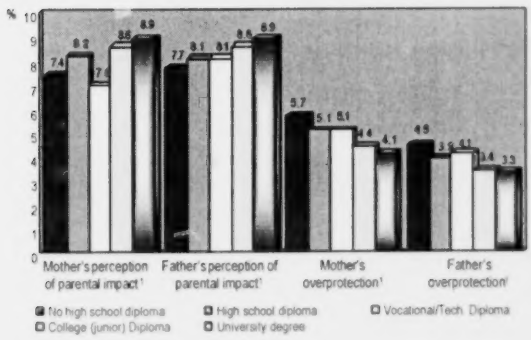
Four characteristics of the parents were retained - age of the mother, educational level of the parents, psychological distress measured by the CES-D depression scale, and immigrant status. For the purposes of analysis, mothers were divided into three age groups -under 20 years of age, (3% of the target population), 20-

15. Specifically, the only infant living with the mother and/or father, a low percentage of parents having other children who were not living in the household (see No. 2 in this series).

34 years of age, comprising the majority (83%), and 35 years of age and over (14%). Compared to mothers in the mid-age group, those under 20 perceived themselves as having less impact on their infant's development (M = 7.3 vs. M = 8.3; $p < 0.001$), but were clearly more overprotective (M = 5.7 vs. M = 4.8; $p < 0.01$) and perceived more qualities to their infant (M = 8.4 vs. M = 7.9; $p < 0.05$). It is noteworthy that mothers under 20 years of age did not show more coercive behaviours (M = 1.4 vs. M = 1.1; $p = 0.11$). Older mothers differentiated themselves from the mid-age group by perceiving themselves as having less impact (M = 7.9 vs. M = 8.3; $p < 0.05$) and had a greater tendency to be overprotective (M = 5.3 vs. M = 4.8; $p < 0.001$), although they were less coercive (M = 0.9 vs. M = 1.1; $p < 0.05$). No difference among the mothers' age groups was observed with regards to self-efficacy (data not shown).

Educational level of the mothers and fathers was defined by using the highest level of education attained as the base category. Five categories were considered - no high school diploma, high school diploma or some high school completed, vocational/technical diploma, college (junior) diploma, university degree. As illustrated in Figure 3.5, perceived impact and overprotection varied with the mother's educational level.

Figure 3.5
Perception of Parental Impact and Parental Overprotection in Mothers and Fathers by their Educational Levels, 1998



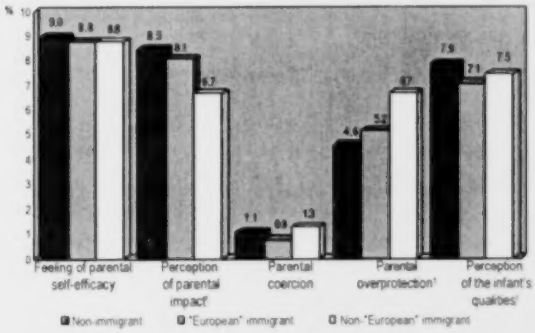
1. $p < 0.001$.

Source : *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

The more educated the mother, the more she perceived having an impact on the child's development and the less she showed overprotective behaviours. It is of note that the same trends were found in the fathers (see Figure 3.5). One other difference related to the educational level of the mother was observed. Mothers with the highest educational level (university degree, M = 8.1) attributed more qualities to their infant than the least educated ones (no high school diploma, M = 7.7 vs. high school diploma, M = 7.6; $p < 0.001$) (data not shown).

Immigrant status was categorized by the birthplace of the parents - non-immigrant (born in Canada), "European" immigrant and non-"European" immigrant (see Chen *et al.*, 1996 and No. 2 in this series of papers). As illustrated in Figure 3.6, non-"European" immigrant mothers differed in many dimensions. Compared to those born in Canada, they perceived themselves as having less impact on their infant's development, revealed overprotective behaviours and attributed less qualities to their infant. "European" immigrant mothers were different from native-born Canadian mothers in having a slightly less positive perception of the infant's qualities. Analyses conducted on the fathers' responses revealed the same trends as those of the mothers (data not shown).

Figure 3.6
Mean Scores of Mothers for Each Dimension of the PPBS by their Immigrant Status, 1998

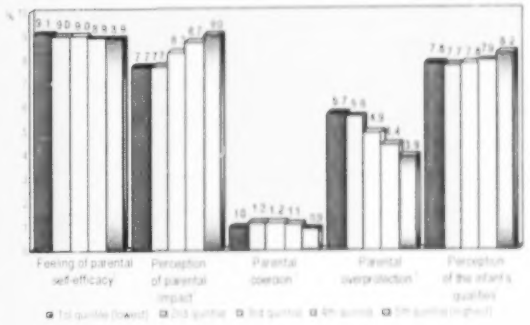


1. $p < 0.001$.

Source : *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

Pearson correlations between depression scores and each of the five parental perception and behaviour dimensions showed weak,

Figure 3.3
Mean Scores of Mothers for Each Dimension of the PPBS by Socioeconomic Status of the Family, 1998

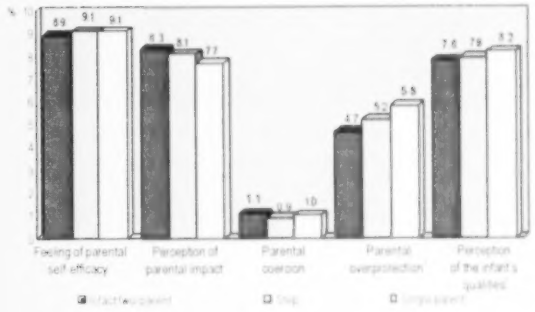


1. $p < 0.001$.

Source: *Institut de la statistique du Québec, ELDEQ 1998-2002.*

Compared to mothers in intact two-parent families, single-parent mothers perceived having less impact on the development of their child and showed more overprotective behaviours (the three types of families differed here) (figure 3.4). In addition, compared to mothers in intact two-parent families, single mothers perceived themselves as slightly more efficient and saw higher physical and cognitive qualities in their infants. No significant difference was observed, however, in coercive behaviour.

Figure 3.4
Mean Scores of Mothers for Each Dimension of the PPBS by Type of Family, 1998



1. $p < 0.001$.

Source: *Institut de la statistique du Québec, ELDEQ 1998-2002.*

Correlations between mother's perception of spousal/partner support and the perception and behaviour scores revealed a positive association between perceived spousal support and maternal self-efficacy ($r = 0.22$; $p < 0.001$) and paternal self-efficacy ($r = 0.32$; $p < 0.001$). It is of note that spousal support perceived by the mother had a stronger association with paternal self-efficacy than with maternal self-efficacy. This possibly reflects a stronger commitment on the part of some fathers to caregiving for their infant, which translates into a feeling of greater parental efficacy, and in turn, perception of better spousal support on the part of the mother. Other significant correlations emerged, although weaker. Spousal/partner support was positively associated with the perception of the infant's qualities ($r = 0.10$; $p < 0.001$ for the mothers and $r = 0.11$; $p < 0.001$ for the fathers) and negatively correlated with coercive behaviours ($r = -0.09$; $p < 0.001$ for the mothers and fathers). Perception of spousal support was also correlated, though weakly, with the perception of impact ($r = 0.08$; $p < 0.001$) and overprotection ($r = 0.07$; $p < 0.01$) in the fathers (data not shown).

Mothers and fathers of a singleton infant perceived greater physical and cognitive qualities in him than those who had more than one child (data not shown; mothers: 8.2 vs. 7.7; $p < 0.001$; fathers: 8.2 vs. 7.6; $p < 0.001$). Furthermore, the fact that the infant, for the moment at least, was the sole child in the family,[15] was associated with maternal behaviours which were slightly more coercive (1.2 vs. 1.0; $p < 0.01$) and overprotective (5.0 vs. 4.8; $p < 0.05$), a higher self-efficacy (8.2 vs. 7.8; $p < 0.001$) and, in the father, with a slightly higher perception of impact (8.4 vs. 8.2; $p < 0.01$) (data not shown).

3.3 Variations in Parenting Perceptions and Behaviours by Parental Characteristics

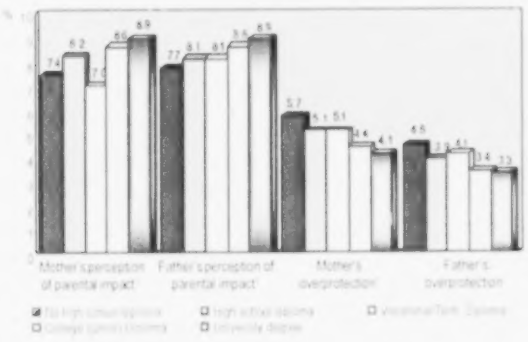
Four characteristics of the parents were retained - age of the mother, educational level of the parents, psychological distress measured by the CES-D depression scale, and immigrant status. For the purposes of analysis, mothers were divided into three age groups -under 20 years of age, (3% of the target population), 20-

15. Specifically, the only infant living with the mother and/or father; a low percentage of parents having other children who were not living in the household (see No. 2 in this series).

34 years of age, comprising the majority (83%), and 35 years of age and over (14%). Compared to mothers in the mid-age group, those under 20 perceived themselves as having less impact on their infant's development ($M = 7.3$ vs. $M = 8.3$; $p < 0.001$), but were clearly more overprotective ($M = 5.7$ vs. $M = 4.8$; $p < 0.01$) and perceived more qualities to their infant ($M = 8.4$ vs. $M = 7.9$; $p < 0.05$). It is noteworthy that mothers under 20 years of age did not show more coercive behaviours ($M = 1.4$ vs. $M = 1.1$; $p = 0.11$). Older mothers differentiated themselves from the mid-age group by perceiving themselves as having less impact ($M = 7.9$ vs. $M = 8.3$; $p < 0.05$) and had a greater tendency to be overprotective ($M = 5.3$ vs. $M = 4.8$; $p < 0.001$), although they were less coercive ($M = 0.9$ vs. $M = 1.1$; $p < 0.05$). No difference among the mothers' age groups was observed with regards to self-efficacy (data not shown).

Educational level of the mothers and fathers was defined by using the highest level of education attained as the base category. Five categories were considered - no high school diploma, high school diploma or some high school completed, vocational/technical diploma, college (junior) diploma, university degree. As illustrated in Figure 3.5, perceived impact and overprotection varied with the mother's educational level.

Figure 3.5
Perception of Parental Impact and Parental Overprotection in Mothers and Fathers by their Educational Levels, 1998



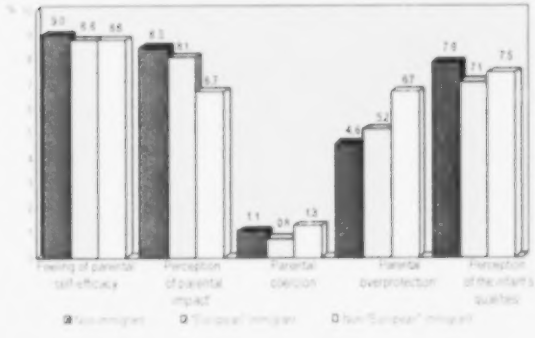
1. $p < 0.001$

Source : *Institut de la statistique du Québec, ELDEQ 1998-2002*

The more educated the mother, the more she perceived having an impact on the child's development and the less she showed overprotective behaviours. It is of note that the same trends were found in the fathers (see Figure 3.5). One other difference related to the educational level of the mother was observed. Mothers with the highest educational level (university degree, $M = 8.1$) attributed more qualities to their infant than the least educated ones (no high school diploma, $M = 7.7$ vs. high school diploma, $M = 7.6$; $p < 0.001$) (data not shown).

Immigrant status was categorized by the birthplace of the parents - non-immigrant (born in Canada), "European" immigrant and non-"European" immigrant (see Chen *et al.*, 1996 and No. 2 in this series of papers). As illustrated in Figure 3.6, non-"European" immigrant mothers differed in many dimensions. Compared to those born in Canada, they perceived themselves as having less impact on their infant's development, revealed overprotective behaviours and attributed less qualities to their infant. "European" immigrant mothers were different from native-born Canadian mothers in having a slightly less positive perception of the infant's qualities. Analyses conducted on the fathers' responses revealed the same trends as those of the mothers (data not shown).

Figure 3.6
Mean Scores of Mothers for Each Dimension of the PPBS by their Immigrant Status, 1998



1. $p < 0.001$

Source : *Institut de la statistique du Québec, ELDEQ 1998-2002*

Pearson correlations between depression scores and each of the five parental perception and behaviour dimensions showed weak

but significant correlations between depressive symptoms in the fathers or mothers and four of the five dimensions. The higher the feeling of depression, the lower the feeling of parental self-efficacy (mother: $r = -0.13$; $p < 0.001$; father: $r = -0.24$; $p < 0.001$), the lower the impact they felt they were having on their child's development (mother: $r = -0.14$; $p < 0.001$; father: $r = -0.19$; $p < 0.001$), and the more they reported coercive (mother: $r = 0.22$; $p < 0.001$; father: $r = 0.22$; $p < 0.001$) and overprotective behaviours (mother: $r = 0.15$; $p < 0.001$; though significant, very weak for the father: $r = 0.05$; $p < 0.05$). The feeling of depression showed a weak, negative correlation with perception of the infant's qualities in the fathers ($r = -0.10$; $p < 0.001$), but not in the mothers (data not shown).

3.4 Variations in Parenting Perceptions and Behaviours Related to the Characteristics of the Infant

No significant difference was observed in the five dimensions of parenting perceptions and behaviours by sex of the infant, for both parents. Two sources of information were used for evaluating the infant's temperament - the mothers and fathers.

Pearson correlations between the perception and behaviour scales and infants' difficult temperament (as reported by the parents) are shown in Table 3.3. The correlation between the two evaluations of temperament was $r = 0.59$; $p < 0.001$. Self-efficacy in both mothers and fathers was negatively associated with difficult temperament in the infant as perceived by the parents. The more they perceived their infant as difficult, the less they felt they were effective as a parent. The tendency to coercion in mothers and fathers was positively associated with perceived difficult temperament in the infant. The more the child was perceived as difficult by the parents, the more they reported resorting to coercive behaviours. The perception of the general qualities of the infant was inversely, though marginally, associated with difficult temperament. The perception of impact and overprotection were not associated with difficult temperament, except very weakly in the mothers.

Table 3.3
Correlations Among the PPBS Dimensions and Difficult Temperament of the Infant as Perceived by the Parents, 1998[1]

	PPBS Dimensions				
	Self-Efficacy	Impact	Coercion	Overprotection	Qualities
Difficult temperament according to the mother					
Mother's PPBS	-0.22†††	0.01	0.21†††	0.04	-0.07††
Father's PPBS	-0.13†††	0.03	0.19†††	0.02	-0.05†
Difficult temperament according to the father					
Mother's PPBS	-0.26†††	0.01	0.31†††	-0.05†	-0.12†††
Father's PPBS	-0.21†††	0.03	0.19†††	-0.03	-0.05†

Note : † indicates $p < 0.05$; †† $p < 0.01$; ††† $p < 0.001$.

1. Weighted n varied from 2,112 to 2,124 (1st line), 1,821 to 1,839 (2nd line), 1,798 to 1,816 (3rd line), 1,786 to 1,799 (4th line).

Source : *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

3.5 Contribution of Risk Factors Retained to the Results of the PPBS

The risk factors retained in this study were not mutually exclusive. To evaluate the respective contributions of these factors to the results of the PPBS, multiple regression analyses were conducted for each dimension of maternal perceptions and behaviours. In order, the predictors for the mother were difficult temperament of the infant (the mean of the evaluations of the mother and father), mother's age (under 20 yrs vs. 20 yrs or over), mother's depression score, mother's educational level, being an immigrant (non-"European" vs. "European" immigrant or non-immigrant), mother's perception of spousal/partner support, type of family (single-parent vs. two-parent, insufficient income (rather than socioeconomic status, with which it was strongly associated) and the number of children living in the household (one, or more than one child).

The risk factors retained accounted for 12% of the variance in maternal self-efficacy, the essential predictors being difficult temperament of the infant (Beta = -0.23; $p < 0.001$), perceived spousal/partner support (Beta = 0.18; $p < 0.001$), and more marginally, mother's feeling of depression (Beta = -0.07; $p < 0.01$) and being a non-"European" immigrant (Beta = -0.09; $p < 0.01$) (data not shown).

In all, 13% of the variance in the perception of impact was explained by the contribution of the factors retained. Two characteristics made unique and strong contributions - being a non-"European" immigrant (Beta = -0.24; $p < 0.001$) and educational level of the mother (Beta = 0.18; $p < 0.001$). Also associated, to a lesser degree, was the feeling of depression in the mother (Beta = -0.07; $p < 0.01$) and insufficient income (Beta = -0.07; $p < 0.05$).

With regards to behaviours reported by the parents, 10% of the variance in the tendency to coercion was explained by the factors retained, mainly by difficult temperament of the infant (Beta = 0.19; $p < 0.001$) and feeling of depression in the mother (Beta = 0.19; $p < 0.001$). The fact of being a singleton child in the family (Beta = 0.07; $p < 0.01$) and single parenthood (Beta = 0.05; $p < 0.01$) seemed also to make modest contributions to coercive behaviour.

Fifteen percent of the variance observed in the tendency to overprotection was explained by the factors considered. Many made unique contributions - being a non-"European" immigrant (Beta = 0.22; $p < 0.001$), educational level of the mother (Beta = 0.20; $p < 0.001$), insufficient income (Beta = 0.13; $p < 0.001$), and to a lesser degree, being a singleton child (Beta = 0.09; $p < 0.001$) and the feeling of depression in the mother (Beta = 0.07; $p < 0.01$).

Finally, only 5% of the variance of the perception of the infant's qualities could be explained by the factors retained, mainly the fact of being the only child in the family (Beta = 0.12; $p < 0.001$), but also to a lesser degree spousal support (Beta = 0.09; $p < 0.001$), mother's educational level (Beta = 0.08; $p < 0.001$), absence of difficult temperament (Beta = -0.07; $p < 0.01$) and not being a non-"European" immigrant (Beta = -0.08; $p < 0.05$).

The same analyses were conducted on the parenting perceptions and behaviours of the fathers, with the exception of single parenthood, which could not be used as a factor given the lack of information on absent fathers. These analyses are not presented here. However, it is important to underline that overall, they revealed the same trends observed in the mothers.

4. Conclusion

A variety of factors were associated with different dimensions of parenting perceptions and behaviours. Difficult temperament of the infant, parental depression, spousal/partner support, educational level and immigrant status were factors which played a role in this regard. It is interesting to note that these differed according to the dimension retained. The fact that the infant was perceived by his parents as having a difficult temperament was significantly associated with the feeling of self-efficacy and coercive behaviour reported by the parents. However, this factor did not seem to be associated with the perception of impact or overprotection. While perceived spousal/partner support seemed to be associated with self-efficacy, the affective status of the parent (symptoms of depression) emerged as a factor associated with coercion, and to a lesser extent, to self-efficacy and overprotection. It therefore seems that infant characteristics combined with family factors or parental characteristics to explain parental self-efficacy and coercive behaviours. However, causality should not be interpreted too hastily, given the nature of correlations and the absence of a temporal sequence in these data.

Insufficient income, which appeared as an important determinant of perception of impact and overprotection in univariate analyses, seems to have made a more modest contribution when the other factors were included. These preliminary data suggest that the association between these dimensions and insufficient income can be explained in part by factors associated with characteristics of the mother, notably educational level and being a non-"European" immigrant. The latter two seemed to have made the most important contributions. The non-"European" variable deserves some reflection and should be scrutinized more in depth, since it suggests that cultural determinants may be involved in the reporting of, or actual behaviours of parents.

The fact that the negative poles of the dimensions retained characterized only a part of the target population, as indicated by the frequency distributions of four of the five, may explain the modest nature of the results. It is also possible that certain perceptions and behaviours had not yet crystallized, given that the newborn child had only recently arrived. It will be interesting to re-examine the scale in the coming rounds of data collection, planned for the ages of 17 and 29 months, when a greater number of mothers will have returned to the labour market, and the children will be at developmental stages marked by more motor autonomy and the testing of this with the parents.

The longitudinal nature of the survey will help ascertain to what degree parental perceptions and behaviours play a role in the emergence of adjustment problems in the children. This should help gain a better understanding of the mechanisms by which certain adverse conditions can affect child development. It is probable that these factors interact according to the rules of the mediation and moderation of effects. Therefore, it is possible to think that maternal perceptions and behaviours play a mediating role as to certain environmental factors. In fact, it is likely that adverse environmental factors can affect child development, but the effect is mediated by their impact on parental perceptions and behaviours (mediating effect), the parents being the most proximate environment of the child in his first year of life. It is also possible that parental perceptions and behaviours may moderate the potential impact of adverse environmental factors (moderation effect). Whatever the case, this longitudinal study will undoubtedly help identify children in problematic developmental trajectories and suggest the most promising intervention paths.

Parenting and Family Relations

Part II
Family Environment

1. Introduction

Parents play an essential role in the creation of a positive environment for the psychological and social development of their children, particularly in early childnood. The first part of this paper presented an overview of Québec parents' perceptions and behaviours regarding their 5-month-old infants and shed light on their associations with certain infant and parental characteristics. The *Étude longitudinale du développement des enfants du Québec* (ÉLDEQ 1998-2002) (Longitudinal Study of Child Development in Québec) includes additional measurements of the quality of the interaction amongst family members permitting eventually to better understand in what way the family environment contributes to increasing or decreasing the risk that the child will present future adjustment problems (Rutter, 1990; Werner & Smith, 1992). These measures include an assessment of family functioning and positive parenting practices by the person who knows the infant best (Person Most Knowledgeable - PMK) and an evaluation of the parent/infant relationship by a third party, namely the interviewer. These aspects of the family environment are the subject matter of this paper.[1]

Researchers generally agree upon the fact that the quality of family relationships, particularly the quality of communication between the parents, is strongly associated not only with their degree of satisfaction with the relationship (Rogge & Bradbury; 1999) and the risk of the couple separating (Devine & Forehand, 1996), but also directly with the well-being of the children. Disagreements and conflicts between the parents may therefore contribute to the genesis of mental health problems in the children (Bergeron *et al.*, 1997; Offord *et al.*, 1989a).

A number of epidemiological studies have revealed significant associations between the quality of the parent/child relationship and affective and behavioural problems in youth (Bergeron *et al.*, 1997; Landy & Tam, 1996). Hostile parenting practices, for example, increase the risk that a child will adopt maladjusted behaviours, whereas positive parenting practices are an important protective factor against psychosocial disorders in children living in multiple-risk environments (Landy & Tam, 1998; Werner, 1993).

Furthermore, the degree of stimulation the child receives in his family environment has been shown to be associated with a variety of developmental indicators (Joseph, 1999). It has been observed that the capacity of the mother to detect the needs of her child, respond to them appropriately and provide a stimulating environment is positively associated with the child's health, his physical, language and cognitive development as well as his social skills and temperament (Bradley, 1993; Murray & Hombaker, 1997; Smith *et al.*, 1996; Strauss & Knight, 1999; Wallace *et al.*, 1998).

However, the quality of interactions amongst family members varies with certain characteristics of the family environment. Family dysfunction is more prevalent in low-income families and those in which the parents are suffering from depression (Fiscella, 1999; Friedemann & Webb, 1995; Keitner *et al.*, 1995). Parenting practices and the quality of stimulation the child is provided with in his family environment also seem to be associated with the mental health of the parents (Bradley, 1993; White & Barrowclough, 1998). Nevertheless, socioeconomic status of the family appears to be more closely linked to the degree of stimulation the child receives in the family environment than positive parenting practices (Bradley, 1993; Chao & Willms, in press).

The data collected in ÉLDEQ 1998 provide a portrait of the family environment in which Québec infants are evolving and a means of verifying whether the quality of family relationships vary with certain characteristics of the parents or the baby's environment. Variables examined in relation to certain aspects of the family environment for this second part of the paper were sufficiency of household income, age and educational level of the parents, mother's immigration status, mother's employment status at the time of the survey, type of family and birth order of the infant. Other factors studied in terms of their association with the family environment were variables pertaining to the adjustment of the parents or the couple's relationship such as symptoms of depression in the mother or father, and spousal support perceived by the mother.

1. Another measurement of the quality of family relationships, namely the support the mother perceived she was receiving from her spouse/partner, is examined in No. 11 in this series of papers.

With the exception of information on symptoms of depression in the father derived from the Self-Administered Questionnaire for the Father (SAQF) and the measurement of conjugal support perceived by the mother derived from the Self-Administered Questionnaire for the Mother (SAQM), the data were taken from the Computerized Questionnaire Completed by the Interviewer (CQCI) administered to the PMK.

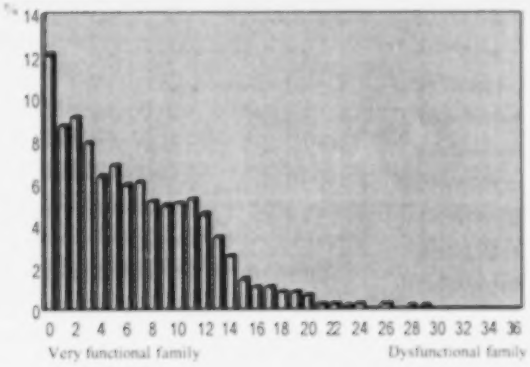
2. Family Functioning

ÉLDEQ included the family functioning scale used in the Ontario Child Health Study (Offord *et al.*, 1989b) and the National Longitudinal Study of Children and Youth (NLSCY; Canada). In the Computerized Questionnaire Completed by the Interviewer (CQCI), the PMK had to respond to 12 questions on 6 dimensions reflecting the quality of family relationships, such as problem-solving, communication, roles, affective responsiveness, affective involvement and behaviour control. For each item, the PMK had to indicate on a scale of 1 (strongly agree) to 4 (strongly disagree) to what degree the statement corresponded with her perception of the quality of intra-family relationships. Among the statements presented to the PMK were: "We express feelings to each other," "We don't get along well together," and "We feel accepted for what we are." The family functioning scale therefore was designed to assess the quality of the relationships among all members of the immediate family.

Information on their family functioning was provided by 2,188 PMKs, who in virtually all cases (99.7%) were the biological mothers of the infant. Figure 2.1 shows the distribution of infants according to the results obtained on the family functioning scale.

As illustrated, the distribution has a strong bias to the left, which indicates that the majority of PMKs perceived their families as being very functional. Based on the clinical threshold of family functioning established by researchers at the Chedoke-McMaster Hospital in Hamilton, Ontario (Cadman *et al.*, 1991), more than 90% of the infants were living in well-functioning families (result between 0 and 14). Only 7% of the families could be considered dysfunctional (result higher than 15).

Figure 2.1
Distribution of Infants by the PMK's Evaluation of Family Functioning, 1998



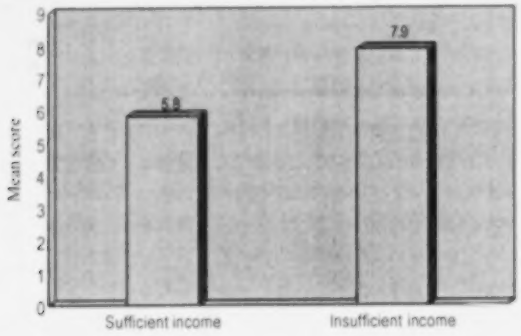
Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002*

2.1 Sociodemographic Characteristics

When families with an income considered sufficient were compared with those whose family income was below the low-income cut-off, the quality of family relationships was lower in the latter. The mean score obtained on the family functioning scale was higher in the low-income families, suggesting they reported more problems or less satisfactory family relationships (7.9 vs. 5.8; see Figure 2.2).[2]

2. The data from a number of ÉLDEQ scales did not show a normal distribution. In all cases where mean comparison tests were applied, chi-square tests were conducted to confirm the results. These categorized the variables related to diverse scales into three relatively equal categories (tertiles). The analyses confirmed the trends observed by comparing the means. In general, the threshold of significance observed in the mean comparison tests were close to those obtained in the chi-square tests.

Figure 2.2
Evaluation of Family Functioning by the PMK[1] by Level of Household Income, 1998[2]



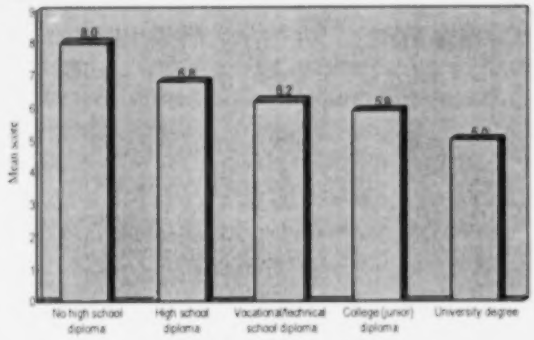
Note : The level of sufficient income was defined according to the low-income cut-off set by Statistics Canada. For more details, see No. 2 in this series of papers.

1. A higher score on the family functioning scale indicates a higher level of family dysfunction.
2. $p < 0.001$.

Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

The degree of family functioning was also associated with the mother's educational level. As shown in Figure 2.3, there were more indicators of family dysfunction in mothers who had no high school diploma compared to those with higher educational levels. In fact, the differences in the assessment of family functioning by education of the mother were progressive and showed a gradient. Only households in which the mother had a (junior) college diploma showed no difference from those in which the mother had a vocational/technical diploma. There was also an association observed between family functioning and educational level of the father. Although the gradient was less accentuated, fathers with no high school diploma were significantly more likely to live in less functional households in terms of intra-family relationships than those who had successfully completed high school, college (junior) or university ($p < 0.001$; data not shown). Variations were also observed related to employment status of the mother: mothers who worked at the time of the survey generally reported fewer indices of family dysfunction than those who did not work (5.6 vs. 6.5; $p < 0.01$; data not shown). This result may reflect in part the effect of income or educational level of the parents indicated above. It will be interesting to pursue other analyses to better understand the link between working mothers and family functioning.

Figure 2.3
Evaluation of Family Functioning by the PMK by Educational Level of the Mother, 1998[1]



1. $p < 0.001$.

Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

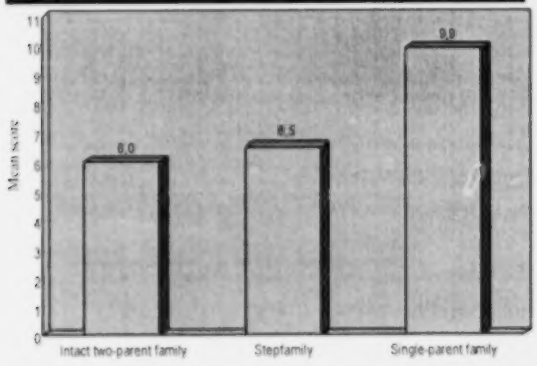
The ÉLDEQ 1998 data also reveal that perceived family functioning varied with the age of the mother. Infants with a teenage mother were more likely to be in a family with lower quality relationships than those with an older mother ($p < 0.001$; data not shown). In comparison, the relationship between family functioning perceived by the PMK and the age of the father appeared to be less clear. The quality of family relationships in which the father was under 25 years of age showed no significant difference from that reported in families where the father was 25 or over. Only families in which the father was between 25 and 34 years of age presented fewer indicators of family dysfunction that those with fathers age 35 and over ($p < 0.001$; data not shown).

Ethnocultural characteristics of the infant also seemed related to family functioning. The quality of family relationships was less favourable in families in which the mother was a non-"European" immigrant than in those in which the mother was a "European" immigrant or native-born Canadian (8.6 vs. 5.2 and 6.1 respectively; $p < 0.001$; data not shown).

On the whole, family functioning did not seem to be significantly associated with the infant's birth order. Only families with three or more children tended to show a lower level of family functioning

than those with only one child (6.8 vs. 6.1; p = 0.05, data not shown). As shown in Figure 2.4, greater variations were observed according to the type of family. Single-parent PMKs reported more indicators of family dysfunction than PMKs in two-parent families, intact or step. However, it should be emphasized that all of these characteristics were strongly associated among themselves. For example, mothers in single-parent families were more likely to be younger, less educated, unemployed or to live in a low-income household (see No. 2 in this series of papers).

Figure 2.4
Evaluation of Family Functioning by the PMK by Type of Family, 1998[1]



1. $p < 0.001$.

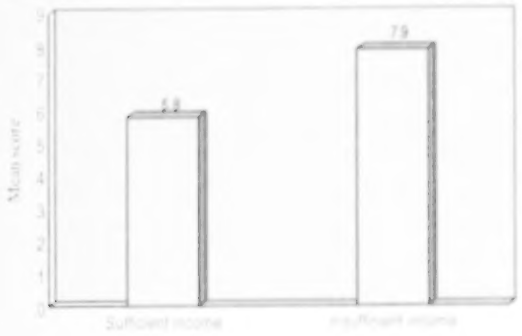
Source : Institut de la statistique du Québec, *ÉLDEQ 1998-2002*.

2.2 Parental and Family Characteristics

The ÉLDEQ data revealed that the quality of family relationships was associated with the degree of depression symptoms reported by the mother, and to a lesser degree, by the father ($r = 0.46$; $p < 0.001$ and $r = 0.24$; $p < 0.001$, respectively). More specifically, the scores on the family functioning scale of approximately 30% of depressed mothers[3] were in the dysfunctional range (higher than 14), whereas only 4% of non-depressed mothers were in dysfunctional families ($p < 0.001$). In terms of the fathers, 13% of depressed fathers, namely those in the upper 10th percentile of the depression scale, versus 5% of non-depressed fathers, were in families described by the PMK as dysfunctional in intra-family relationships ($p < 0.01$; data not shown). Moreover, in two-parent families, the quality of intra-family relationships was significantly correlated with the degree of spousal/partner support perceived by the mother ($r = -0.44$; $p < 0.001$; data not shown).

3. Mothers and fathers were considered "depressed" if their score on the depression scale used in ÉLDEQ was above the 90th percentile. Landy & Tam (1996) considered a result of 13 or higher obtained in this abridged version of the CES-D as indicating the presence of moderate to severe depression. In ÉLDEQ 1998, slightly more than one in ten mothers (11%) and 4% of fathers obtained a score equal to or higher than 13.

Figure 2.2
Evaluation of Family Functioning by the PMK[1] by Level of Household Income, 1998[2]



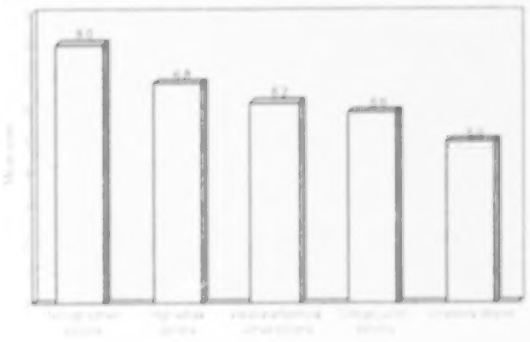
Note: The level of sufficient income was defined according to the low-income cut-off set by Statistics Canada. For more details, see No. 2 in this series of papers.

1. A higher score on the family functioning scale indicates a higher level of family dysfunction.
2. $p < 0.001$

Source: *Institut de la statistique du Québec, ELDEQ 1998-2002.*

The degree of family functioning was also associated with the mother's educational level. As shown in Figure 2.3, there were more indicators of family dysfunction in mothers who had no high school diploma compared to those with higher educational levels. In fact, the differences in the assessment of family functioning by education of the mother were progressive and showed a gradient. Only households in which the mother had a (junior) college diploma showed no difference from those in which the mother had a vocational/technical diploma. There was also an association observed between family functioning and educational level of the father. Although the gradient was less accentuated, fathers with no high school diploma were significantly more likely to live in less functional households in terms of intra-family relationships than those who had successfully completed high school, college (junior) or university ($p < 0.001$; data not shown). Variations were also observed related to employment status of the mother: mothers who worked at the time of the survey generally reported fewer indices of family dysfunction than those who did not work (5.6 vs. 6.5; $p < 0.01$; data not shown). This result may reflect in part the effect of income or educational level of the parents indicated above. It will be interesting to pursue other analyses to better understand the link between working mothers and family functioning.

Figure 2.3
Evaluation of Family Functioning by the PMK by Educational Level of the Mother, 1998[1]



1. $p < 0.001$

Source: *Institut de la statistique du Québec, ELDEQ 1998-2002.*

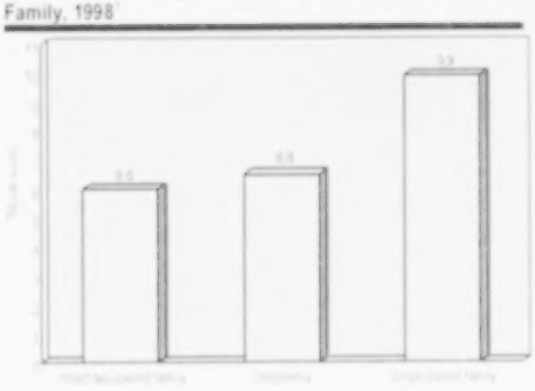
The ELDEQ 1998 data also reveal that perceived family functioning varied with the age of the mother. Infants with a teenage mother were more likely to be in a family with lower quality relationships than those with an older mother ($p < 0.001$; data not shown). In comparison, the relationship between family functioning perceived by the PMK and the age of the father appeared to be less clear. The quality of family relationships in which the father was under 25 years of age showed no significant difference from that reported in families where the father was 25 or over. Only families in which the father was between 25 and 34 years of age presented fewer indicators of family dysfunction that those with fathers age 35 and over ($p < 0.001$; data not shown).

Ethnocultural characteristics of the infant also seemed related to family functioning. The quality of family relationships was less favourable in families in which the mother was a non-European immigrant than in those in which the mother was a European immigrant or native-born Canadian (6.6 vs. 5.2 and 6.1 respectively; $p = 0.001$; data not shown).

On the whole, family functioning did not seem to be significantly associated with the infant's birth order. Only families with three or more children tended to show a lower level of family functioning

than those with only one child (6.8 vs. 6.1; $p = 0.05$; data not shown). As shown in Figure 2.4, greater variations were observed according to the type of family. Single-parent PMKs reported more indicators of family dysfunction than PMKs in two-parent families, intact or step. However, it should be emphasized that all of these characteristics were strongly associated among themselves. For example, mothers in single-parent families were more likely to be younger, less educated, unemployed or to live in a low-income household (see No. 2 in this series of papers).

Figure 2.4
Evaluation of Family Functioning by the PMK by Type of Family, 1998[1]



1. $p < 0.001$

Source: Institut de la statistique du Québec, ELDEQ 1998-2002

2.2 Parental and Family Characteristics

The ELDEQ data revealed that the quality of family relationships was associated with the degree of depression symptoms reported by the mother, and to a lesser degree, by the father ($r = 0.46$; $p < 0.001$ and $r = 0.24$; $p < 0.001$, respectively). More specifically, the scores on the family functioning scale of approximately 10% of depressed mothers[3] were in the dysfunctional range (higher than 14), whereas only 4% of non-depressed mothers were in dysfunctional families ($p < 0.001$). In terms of the fathers, 13% of depressed fathers, namely those in the upper 10th percentile of the depression scale, versus 5% of non-depressed fathers, were in families described by the PMK as dysfunctional in intra-family relationships ($p < 0.01$; data not shown). Moreover, in two-parent families, the quality of intra-family relationships was significantly correlated with the degree of spousal/partner support perceived by the mother ($r = -0.44$; $p < 0.001$; data not shown).

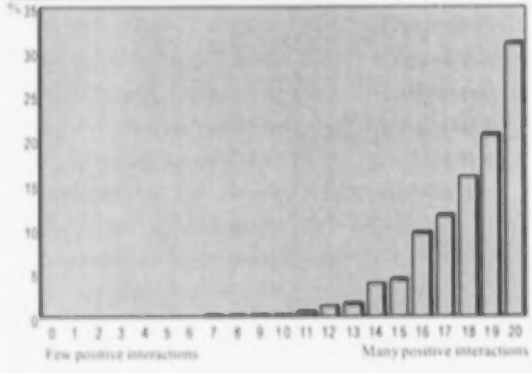
3. Mothers and fathers were considered "depressed" if their score on the depression scale used in ELDEQ was above the 90th percentile. Lanc, & Tam (1995) considered a result of 10 or higher obtained in this abridged version of the CES-D as indicating the presence of moderate to severe depression. In ELDEQ 1998, slightly more than one in ten mothers (11%) and 4% of fathers obtained a score equal to or higher than 10.

3. Parenting Practices

Several aspects of the parent/infant relationship were measured in ÉLDEQ 1998. In this section, we will examine the data related to positive behaviours of parents towards their infant. Adapted from the Parenting Practices Scale developed by Strayhorn & Weidman (1988) and also used in the NLSCY, the positive parenting practices scale was weakly correlated (correlation coefficients varying from - 0.05 to 0.18) with the sub-scales of the PERBEHAVRIS presented in Part 1 of this paper. This suggests that these scales measured different dimensions of the parent/child relationship. With respect to positive parenting practices, five questions were presented to the PMK, who had to indicate on a scale of 1 (never) to 5 (many times a day) the frequency of certain interactions with the infant. Among these questions were: "How often do you praise (the child)," "How often do you and the baby talk and play with each other... ," and "How often do you and the baby laugh together?"

A total of 2,214 PMKs responded to the questions on positive parenting practices in the Computerized Questionnaire Completed by the Interviewer (CQCI). The data were combined to form a scale of positive interactions, the results of which are shown in Figure 3.1.

Figure 3.1
Distribution of Infants by Degree of Positive Interactions between the PMK and the Infant, 1998



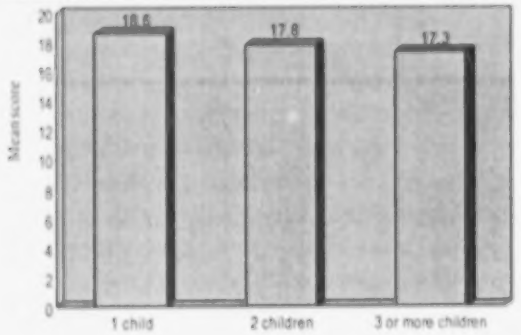
Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

The distribution of infants according to the parents' responses shows a clear bias to the right. This suggests that the majority of infants were in a family environment characterized by frequent positive interactions with their parents.

3.1 Sociodemographic Characteristics

The frequency of positive parenting practices did not vary with most of the sociodemographic characteristics examined. Hence, neither the income level of the household, age, educational level or immigrant status of the mother, nor type of family were significantly associated with the frequency of positive interactions reported by the PMK. The frequency of positive interactions between mother and baby, however, was linked to the number of children in the family. PMKs reported more positive interactions with the infant if he was the sole child in the family compared to families with more than one child. Moreover, infants who had only one sibling seemed to benefit from more positive interactions than those in families with three or more children (17.8 vs. 17.3; $p < 0.01$).

Figure 3.2
Positive Interactions between the PMK and Infant by Number of Children Living in the Household, 1998[1]



1. $p < 0.001$.

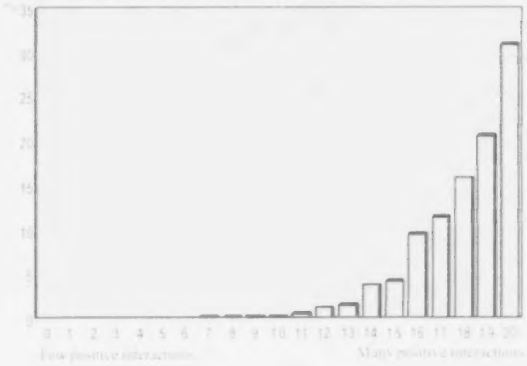
Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

3. Parenting Practices

Several aspects of the parent/infant relationship were measured in ÉLDEQ 1998. In this section, we will examine the data related to positive behaviours of parents towards their infant. Adapted from the Parenting Practices Scale developed by Strayhorn & Weidman (1988) and also used in the NLSCY, the positive parenting practices scale was weakly correlated (correlation coefficients varying from - 0.05 to 0.18) with the sub-scales of the PERBEHAVRIS presented in Part 1 of this paper. This suggests that these scales measured different dimensions of the parent/child relationship. With respect to positive parenting practices, five questions were presented to the PMK, who had to indicate on a scale of 1 (never) to 5 (many times a day) the frequency of certain interactions with the infant. Among these questions were: "How often do you praise (the child)," "How often do you and the baby talk and play with each other... ," and "How often do you and the baby laugh together?"

A total of 2,214 PMKs responded to the questions on positive parenting practices in the Computerized Questionnaire Completed by the Interviewer (CQCI). The data were combined to form a scale of positive interactions, the results of which are shown in Figure 3.1.

Figure 3.1
Distribution of Infants by Degree of Positive Interactions between the PMK and the Infant, 1998



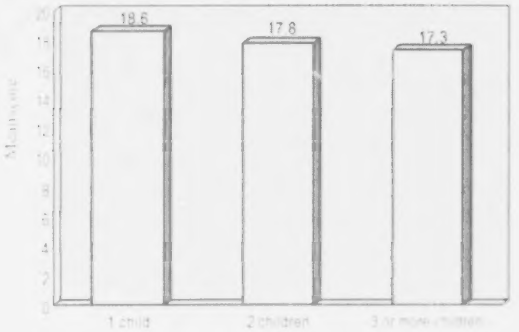
Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002*

The distribution of infants according to the parents' responses shows a clear bias to the right. This suggests that the majority of infants were in a family environment characterized by frequent positive interactions with their parents.

3.1 Sociodemographic Characteristics

The frequency of positive parenting practices did not vary with most of the sociodemographic characteristics examined. Hence, neither the income level of the household, age, educational level or immigrant status of the mother, nor type of family were significantly associated with the frequency of positive interactions reported by the PMK. The frequency of positive interactions between mother and baby, however, was linked to the number of children in the family. PMKs reported more positive interactions with the infant if he was the sole child in the family compared to families with more than one child. Moreover, infants who had only one sibling seemed to benefit from more positive interactions than those in families with three or more children (17.8 vs. 17.3; $p < 0.01$).

Figure 3.2
Positive Interactions between the PMK and Infant by Number of Children Living in the Household, 1998[1]



1. $p < 0.001$

Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002*

3.2 Parental and Family Characteristics

Positive parenting practices varied to a certain yet small degree according to characteristics of the parents or family such as the degree of depression symptoms reported by the mother ($r = -0.10$; $p < 0.001$), spousal/partner support perceived by the mother ($r = 0.09$; $p < 0.001$) and family functioning ($r = -0.14$; $p < 0.001$). Although statistically significant, the associations were rather weak and should be interpreted with caution.[4] Subsequent waves of ÉLDEQ 1998-2002 data will permit to examine to what extend these trends are maintained. Lastly, the frequency of positive parenting practices reported by the PMK did not vary with the employment status of the mothers or the level of depression symptoms reported by the father.

4. Tests on the correlation coefficients were conducted even if many scores on the scale showed abnormal or strongly biased distributions. Consequently, coefficients with weak values are shown for descriptive purposes only.

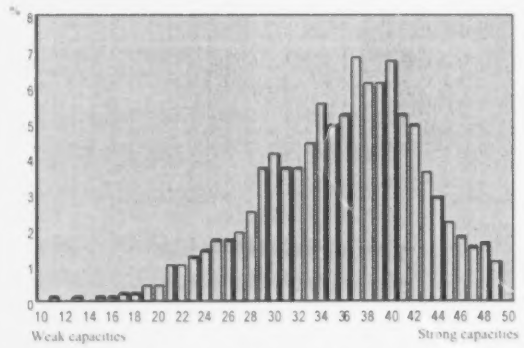
4. Observation of Family Life

In addition to obtaining information from parents on their attitudes and behaviours regarding their infant, ÉLDEQ 1998 included a questionnaire completed by the interviewer which aimed at assessing various aspects of family life and the parent/infant relationship. This questionnaire, entitled Observation of Family Life, is an abridged and adapted version of the Home Observation for Measurement of the Environment Inventory (HOME; Caldwell & Bradley, 1984). This questionnaire was developed to measure the quality and quantity of stimulation and support given to the child in the family environment. HOME has been used in hundreds of studies and its association with cognitive and social development in children has been well documented (Bradley, 1993; Hurt *et al.*, 1998).

In ÉLDEQ 1998, 2,221 Observations of Family Life were filled out by the interviewers. Two scales from this questionnaire were retained for this study, one on the emotional and verbal capacities of the PMK and one on infant stimulation.[5] The first scale contained 10 items which measured both the quality of verbal exchanges between the mother (PMK) and her baby (*e.g.*, "The mother's speech with the baby is distinct, clear and audible") and the mother's verbal skills observed during the interview (*e.g.*, "The mother easily and freely expresses her ideas, and her responses during a conversation are of appropriate length"). The second scale comprised five items measuring the frequency, during the interview, with which the mother talked to her infant while working or going about her business, consciously encouraged the progress of his development, and gave him toys which stimulated him to develop new skills. For the 15 items of these scales, the scores the interviewer attributed to the PMK varied between 1 (never) to 5 (always).

Figure 4.1 illustrates the distribution of PMKs (in virtually all cases, 99.7%, the biological mother of the child) on the scale of emotional and verbal skills according to what was observed by the interviewer. It follows a rather normal distribution, grouped around a mean score of 36. The distribution, which is slightly biased to the right, suggests that most mothers demonstrated adequate emotional and verbal capacities during the interviewer's visit.

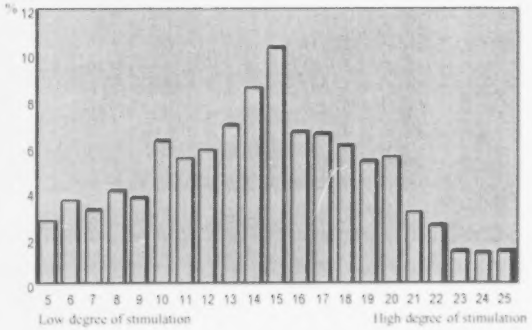
Figure 4.1
Distribution of Infants by Emotional and Verbal Capacities of the PMK as Evaluated by the Interviewer, 1998



Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

The distribution of mothers on the stimulation scale is presented in Figure 4.2. It bears a strong resemblance to a normal curve in which some high and low values are observed, but where most are located around the mean, in this case 14.

Figure 4.2
Distribution of Infants by Degree of PMK's Stimulation as Evaluated by the Interviewer, 1998



Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

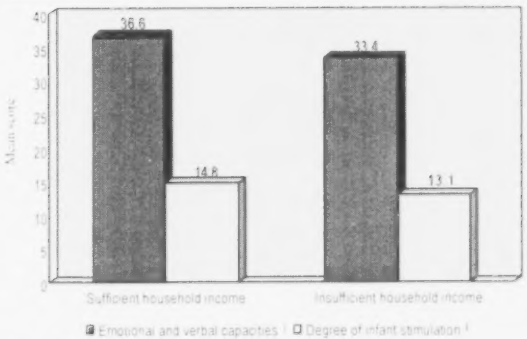
5. Several interviewers could not respond to all the questions in the OFL because, in some cases, the infant was not present or awake. The analysis of the verbal communication scale was therefore based on the responses of 1,996 interviewers, whereas a stimulation score could be calculated for 1,957 PMKs of ÉLDEQ.

The two Observation of Family Life scales were strongly correlated ($r = 0.58$; $p < 0.001$). Therefore, a person with good verbal communication skills and who expressed positive feelings to her baby seemed, according to the interviewer, to also provide a more stimulating environment for him/her.

4.1 Sociodemographic Characteristics

The scores attributed to the PMKs by the interviewers on the two OFL scales varied according to family income. PMKs in low-income families had lower emotional and verbal communication capacities that those observed in families with sufficient income. The level of stimulation the infant received during the visit was also lower in families below the low-income cut-off (Figure 4.3).

Figure 4.3
Emotional and Verbal Capacities of the PMK and Degree of Infant Stimulation by Level of Household Income, 1998



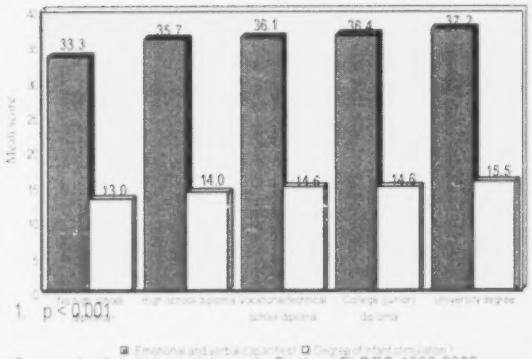
Note: The level of sufficient income was defined according to the low-income cut-off set by Statistics Canada. For more details, see No. 2 in this series of papers.

1. $p < 0.001$.

Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

As shown in Figure 4.4, the educational level of the mother was also associated with the two aspects of the family environment examined in this study. The data revealed that the emotional and verbal capacities and level of infant stimulation were lower in mothers who did not have a high school diploma. Similar effects were noted related to the mother's age. More precisely, compared to older mothers, those under 25 years of age were perceived as exhibiting lower emotional and verbal communication capacities as well as a lower level of infant stimulation ($p < 0.001$; data not shown).[6]

Figure 4.4
Emotional and Verbal Capacities of the PMK and Degree of Infant Stimulation by Educational Level of the Mother, 1998

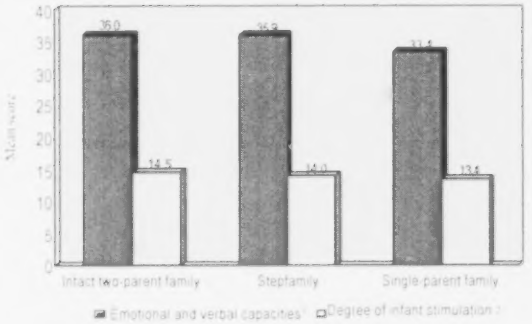


1. $p < 0.001$.

Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

The dimensions measured also varied with the type of family. Emotional and verbal communication capacities were lower in single-parent families than in intact two-parent families or stepfamilies (33.4 vs. 36.0; see Figure 4.5).

Figure 4.5
Emotional and Verbal Capacities of the PMK and Degree of Infant Stimulation by Type of Family, 1998



1. $p < 0.001$.
2. $p < 0.01$.

Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

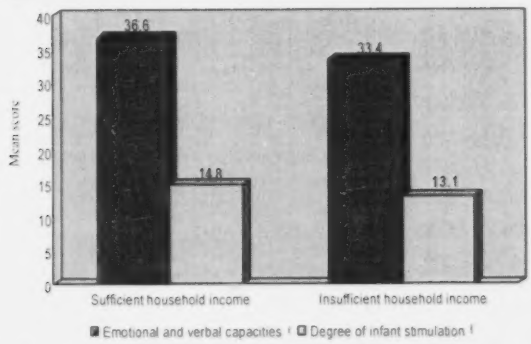
6. Note that mothers between 25 and 29 years of age also had lower verbal communication skills than mothers 40 years of age or over.

The two Observation of Family Life scales were strongly correlated ($r = 0.58$; $p < 0.001$). Therefore, a person with good verbal communication skills and who expressed positive feelings to her baby seemed, according to the interviewer, to also provide a more stimulating environment for him/her.

4.1 Sociodemographic Characteristics

The scores attributed to the PMKs by the interviewers on the two OFL scales varied according to family income. PMKs in low-income families had lower emotional and verbal communication capacities that those observed in families with sufficient income. The level of stimulation the infant received during the visit was also lower in families below the low-income cut-off (Figure 4.3).

Figure 4.3
Emotional and Verbal Capacities of the PMK and Degree of Infant Stimulation by Level of Household Income, 1998



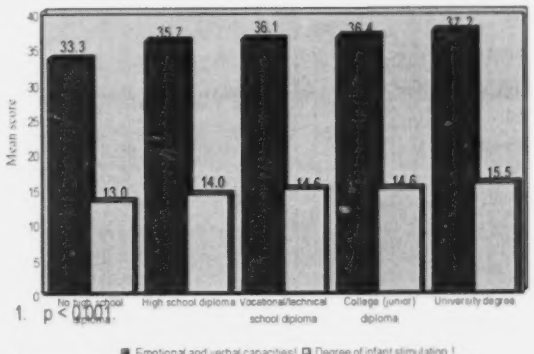
Note : The level of sufficient income was defined according to the low-income cut-off set by Statistics Canada. For more details, see No. 2 in this series of papers.

1. $p < 0.001$.

Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

As shown in Figure 4.4, the educational level of the mother was also associated with the two aspects of the family environment examined in this study. The data revealed that the emotional and verbal capacities and level of infant stimulation were lower in mothers who did not have a high school diploma. Similar effects were noted related to the mother's age. More precisely, compared to older mothers, those under 25 years of age were perceived as exhibiting lower emotional and verbal communication capacities as well as a lower level of infant stimulation ($p < 0.001$; data not shown).[6]

Figure 4.4
Emotional and Verbal Capacities of the PMK and Degree of Infant Stimulation by Educational Level of the Mother, 1998

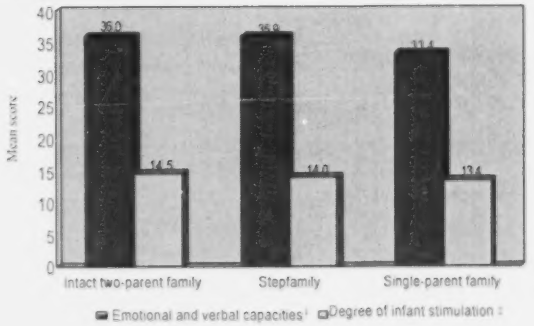


1. $p < 0.001$.

Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

The dimensions measured also varied with the type of family. Emotional and verbal communication capacities were lower in single-parent families than in intact two-parent families or stepfamilies (33.4 vs. 36.0; see Figure 4.5).

Figure 4.5
Emotional and Verbal Capacities of the PMK and Degree of Infant Stimulation by Type of Family, 1998



1. $p < 0.001$.
2. $p < 0.01$.

Source: *Institut de la statistique du Québec, ÉLDEQ 1998-2002.*

6. Note that mothers between 25 and 29 years of age also had lower verbal communication skills than mothers 40 years of age or over.

Moreover, mothers in intact two-parent families were providing a more stimulating environment for their child than single-parent mothers (14.5 vs. 13.4). However, no significant difference was observed in this regard between stepfamilies and the other types of families.

It is noteworthy that the emotional and verbal communication capacities of the mother and stimulation of the infant were also associated with the immigrant status of the mother. According to the observations of the interviewer, born in Canada had better emotional and verbal capacities than non-"European" immigrants. Moreover, just as mothers of European origin, non-immigrant mothers also seemed to provide a more stimulating environment for their baby than non-"European" immigrants ($p < 0.001$; data not shown).

Furthermore, certain aspects of the family environment measured by the OFL varied with the number of children in the household. Only children seemed to benefit from a more stimulating environment than infants in families comprising two or more children ($p < 0.05$; data not shown).

4.2 Parental and Family Characteristics

The analyses revealed that depressed mothers were perceived by the interviewer as being less stimulating and presenting lower emotional and verbal communication capacities.[7] For example, 18% of depressed mothers[8] versus 8% of non-depressed ones were perceived by the interviewer to show very weak verbal and emotional capacities[9]. Similarly, about 18% of depressed mothers compared to 8% of those with fewer depressive symptoms obtained a result below the 10th percentile on the stimulation scale of the OFL ($p < 0.001$; data not shown).

However, there was no significant association between the scales of the OFL and the degree of support the mother perceived she was receiving from her spouse/partner, or the employment status of the mother at the time of the survey.

An interesting result was that the assessment of the family environment by the interviewer was significantly associated with the PMK's perception of family functioning. Approximately 16% of the mothers in dysfunctional families (according to ELDEQ's definition) were perceived by the interviewers as showing weak emotional and verbal communication skills, whereas this was the case for only 9% of mothers in families with better interpersonal relationships ($p < 0.05$; data not shown). The level of stimulation provided by the mother to her child was also associated, though very weakly, with family functioning as well as with certain maternal perceptions and behaviours (PPBS) such as perception of impact, tendency to overprotection and evaluation of the physical and cognitive qualities of the infant.[10] There were also weak correlations between the mother's responses to PPBS and the emotional and verbal communication capacities observed during the interview. Mothers who, according to the interviewer, showed good emotional and verbal capacities were more likely to perceive they were having a greater impact on their child's development ($r = 0.15$; $p < 0.001$), to show fewer tendencies to coercive behaviours ($r = -0.09$; $p < 0.001$) or overprotection ($r = -0.09$; $p < 0.001$), or to have a more favourable perception of their infant's qualities ($r = 0.06$; $p < 0.01$) (data not shown). As previously noted, although significant, the weak associations between the OFL and the PPBS scales suggest that these scales were in large part measuring different facets of the infant's family environment.

In a similar way, there was also a positive but weak association between the emotional and verbal communication skills and a high level of stimulation of the infant on the one hand, and positive parenting practices reported by the mother on the other ($r = 0.16$; $p < 0.001$; and $r = 0.15$; $p < 0.001$ respectively; data not shown).

7. This analysis excluded PMKs (n = 7) who were not the biological mother of the infant.

8. These mothers reported a high number of symptoms of depression, putting them above the 90th percentile on the depression scale (see Note 3).

9. As an index of very weak capacities, the score retained here was below the 10th percentile on the emotional and verbal communications skills scale (OFL).

10. Although significant at the threshold of 0.01, the correlations observed were very weak, namely - 0.07 for family functioning and between 0.07 and 0.09 for the various dimensions of PPBS examined.

5. Conclusion

The results of the analyses conducted on the first year data of ÉLDEQ 1998-2002 suggest that a large majority of Québec infants were living in families functioning well in terms of communication and problem solving. In general, the parents reported a high level of positive behaviours with their 5-month-old infant. Moreover, according to the observations of a third party, the majority of PMKs (virtually all biological mothers) demonstrated adequate emotional and verbal communication capacities and were capable of giving a sufficient level of stimulation to their infant.

However, it should be noted that a number of infants were growing up in less favourable contexts with regards to the quality of interpersonal relationships in the family or other characteristics of the environment that were studied. These unfavourable conditions were associated with several parental characteristics. As reported in other studies (Fiscella, 1999; Friedmann & Webb, 1995; Keitner *et al.*, 1995), families appeared to function less well in low-income households and in those where the mother was depressed. In addition, the results showed that intra-family relationships seemed less satisfactory in families where the mother had little education, was very young, a single-parent, a non-"European" immigrant or perceived a low level of spousal/partner support.

Positive parenting practices, in contrast, were not explained by the sociodemographic characteristics of the family. This has also been observed by Chao & Willms (in press). Nevertheless, certain factors such as the presence of several children in the household, depression in the mother and weak spousal support seemed to reduce the frequency of positive parent/child interactions.

The analyses also confirmed that the characteristics of family life measured by the OFL varied with certain sociodemographic and individual characteristics of the parents (Bradley, 1993). The verbal and emotional capacities observed in the mother and the degree of stimulation she provided the infant were associated with sufficiency of household income, type of family as well as maternal age, education, immigration status and level of depression. The degree of infant stimulation was also associated with the number of children in the family. However, neither employment status of the mother at the time of the survey nor perceived conjugal support was associated with these aspects of family life.

The results of all the analyses conducted suggest there is a complex system of associations among various aspects of the family environment and variables related to sociodemographic, family and individual characteristics of the parents. Not only are family functioning, positive parenting practices and the quality of family life associated, to varying degrees, amongst themselves, but each factor in itself appears to be related to many other environmental characteristics, which could represent a risk factor for the child's future development. An interesting observation was that whereas certain perceptions and behaviours presented in the first part of this paper were associated with a difficult temperament in the infant, none of the family aspects examined here seemed to be associated with this characteristic, recognized as likely contributing to the psychosocial adjustment of the child (see No. 7 in this series of paper).

Child development can be compromised when there is more than one risk factor such as low household income, a teenage mother who has little education, single parenthood or parental depression (Brooks-Gunn & Duncan, 1997; Florsheim *et al.*, 1998). The influence of these risk factors on the adjustment of a child may partially manifest itself through family functioning and the parent/child relationship (Spieker *et al.*, 1999; Wyman *et al.*, 1999). The longitudinal data of ÉLDEQ 1998-2002 will provide a means of examining the complex relationships among child development and factors such as socioeconomic status of the parents, individual parental characteristics and the quality of interactions amongst all members of the family.

Bibliography

ABIDIN, R. R. (1986). *Parenting stress index*, Charlottesville, VA, Pediatric Psychology Press.

ARRINDELL, W. A., M. G. T. KWEE, G. J. METHORST, J. VAN DER ENDE, E. POL & J. M. MORITZ (1989). « Perceived parental rearing styles of agoraphobic and socially phobic in-patients », *British Journal of Psychiatry*, vol. 155, p. 526-535.

AZAR, S. T., D. R. ROBINSON, E. HEKIMIAN & C. T. TWENTYMAN (1984). « Unrealistic expectations and problem-solving ability in maltreating and comparison mothers », *Journal of Consulting and Clinical Psychology*, vol. 52, p. 687-691.

BANDURA, A. (1989). « Social cognitive theory », *Annals of Child Development*, vol. 6, p. 1-60.

BAUMRIND, D. (1991). « Parenting styles and adolescent development », in J. BROOKS-GUNN, R. LERNER & A. C. PETERSON (eds.), *The encyclopedia of adolescence*, New York, Garland, p. 746-758.

BAUMRIND, D. (1997). « The development of instrumental competence through socialization », in A. D. PICK (eds.), *Minnesota Symposium on Child Psychology*, vol. 7, Minneapolis, University of Minnesota Press, p. 2-46.

BERGERON, L., J. P. VALLA, J. J. BRETON, N. GAUDET, C. BERTHIAUME, J. LAMBERT, M. ST-GEORGES, N. SMOLLA & C. DAVELUY (1997). *Enquête québécoise sur la santé mentale des jeunes de 6 à 14 ans*, Montréal, Hôpital Rivière-des-Prairies et Santé Québec.

BOCK, G.R., & J.A. GOODE (eds.) (1996). *Genetics of criminal and antisocial behavior*, CIBA Foundation Symposium 1994, Toronto, John Wiley & Sons.

BOIVIN, M., D. PÉRUSSE, N. TREMBLAY, V. SAYSSET, C. PICHÉ & R. E. TREMBLAY, (1997). « La relation mère-enfant », in SANTÉ QUÉBEC, JETTÉ, M., H. DESROSIERS & R. E. TREMBLAY *« En 2001... j'aurai 5 ans! », Enquête auprès des bébés de 5 mois*, Rapport préliminaire de l'Étude longitudinale du développement des enfants du Québec, Montréal, Ministère de la Santé et des Services sociaux, Gouvernement du Québec.

BORNSTEIN, M. C. (eds.) (1995). *Handbook of Parenting*, Vols. 1-4, New Jersey, Lawrence Erlbaum.

BOWLBY, J. (1982). « *Attachment and Loss (Vol. 1). Attachment (2nd eds.)* », London, Hogarth Press.

BRADLEY, R. H. (1993). « Children's home environment, health, behavior and intervention efforts: A review using the HOME inventory as a marker measure », *Genetic, Social and General Psychology Monographs*, vol. 119, n° 4, p. 439-490.

BRETHERTON, I., & E. WATERS (eds.) (1985). « Growing Points of Attachment Theory and Research », *Monographs of the Society for Research in Child Development*, Serial n° 209.

BROOKS-GUNN, J., & P. L. CHASE-LANDSDALE (1995). « Adolescent parenthood », in M. BORNSTEIN (eds.), *Handbook of Parenting*, New Jersey, Lawrence Erlbaum, p. 113-150.

BROOKS-GUNN, J., & G. DUNCAN (1997). *Consequences of growing up poor*, New York, Russel Sage Publishers.

BUGENTHAL, D. B., & J. J. GOODNOW (1998). « Socialization processes », in W. DAMON (eds.), *Handbook of Child Psychology*, Fifth Edition, vol. 3, New York, John Wiley & Sons, p. 389-462.

BUGENTHAL, D. B., & W. A. SHENNUM (1984). « Difficult children as elicitors and targets of adult concerns: An attributional-behavioral transactional analysis », *Monographs of the Society for Research in Child Development*, vol. 49, n° 1.

CADMAN, D., P. ROSENBAUM, M. BOYLE & D. R. OFFORD (1991). « Children with chronic illness: family and parent demographic characteristics and psychosocial adjustment », *Pediatrics*, vol. 87, n° 6, p. 884-889.

CALDWELL, B. M., & R. H. BRADLEY (1984). *Home Observation for Measurement of the Environment*, Little Rock, AR, University of Arkansas.

CHAO, R. K., & D. J. WILLMS (sous presse). « The effects of parenting practices on children's outcomes », in WILLMS, D. J. (eds.), *Vulnerable children*, University of Alberta Press.

CHEN, J., R. WILKINS & E. NG (1996). « Espérance de santé selon le statut d'immigrant, 1986 et 1991 », *Rapport sur la santé*, vol. 8, n° 3, p. 31-36.

CHORPITA, B. F., & D. H. BARLOW (1998). « The development of anxiety: The role of control in the early environment », *Psychological Bulletin*, vol. 124, p. 3-21.

COIE, J.D., N.F. WATT, S.G. WEST, J.D. HAWKINS, J.R. ASARNOW, H.J. MARKMAN, S.L. RAMEY, M.B. SHURE & B. LONG (1993). « The science of prevention: A conceptual framework and some directions for a National Research Program », *American Psychologist*, vol. 48, p. 1013-1022.

CONGER, R. D., K. CONGER, G. ELDER, F. LORENZ, R. SIMONS & L. WHITBECK (1992). « A family process model for economic hardship and adjustment of early adolescent boys », *Child Development*, vol. 63, p. 526-541.

CONGER, R. D., K. CONGER, G. ELDER, F. LORENZ, R. SIMONS & L. WHITBECK (1993). « Family economic stress and adjustment of early adolescent girls », *Developmental Psychology*, vol. 29, p. 206-219.

CONGER, R. D., X. GE, G. ELDER, F. LORENZ & R. SIMONS, (1994). « Economic stress, coercive family process and developmental problems of adolescents », *Child Development*, vol. 65, p. 541-561.

COX, M. J., M. T. OWEN, V. K. HENDERSON & N. A. MARGAND (1992). « Prediction of infant-father attachment and infant-mother attachment », *Developmental Psychology*, vol. 28, p. 474-483.

CRITTENDEN, P. M. (1988). « Relationship at risk », in BELSKY, J., & T. NEZWORSKI (eds.), *Clinical implications of attachment*, Hillsdale, NJ, Erlbaum, p. 136-174.

CUTRONA, C., & B. TROUTMAN (1986). « Social support, infant temperament, and parenting self-efficacy: A mediational model of postpartum depression », *Child Development*, vol. 57, p. 1507-1518.

DE WOLFF, M. S., & M. H. VAN IJZENDOORN (1997). « Sensitivity and attachment: a meta-analysis on parental antecedents of infant attachment », *Child Development*, vol. 68, p. 571-591.

DEUTSCH, F. M., D. N. RUBLE, A. FLEMING, J. BROOKS-GUNN & G. S. STANGOR (1988). « Information seeking and maternal self-definition during the transition to motherhood », *Journal of Personality and Social Psychology*, vol. 55, p. 420-431.

DEVINE, D., & R. FOREHAND (1996). « Cascading toward divorce: The roles of marital and child factors », *Journal of Consulting and Clinical Psychology*, vol. 64, n° 2, p. 424-427.

DIX, T. (1991). « The affective organization of parenting: Adaptive and maladaptive process », *Psychological Bulletin*, vol. 110, p. 3-25.

DONOVAN, W. L., & L. A. LEAVITT (1985). « Stimulating conditions of learned helplessness: The effects of intervention and attributions », *Child Development*, vol. 56, p. 594-603.

DONOVAN, W. L., L. A. LEAVITT & R.O. WALSH (1990). « Maternal self-efficacy: Illusory control and its effect on susceptibility to learned helplessness », *Child Development*, vol. 61, p. 1638-1647.

DUMKA, L. E., H. D. STOERZINGER, K. M. JACKSON & M.W. ROOSA (1996). « Examination of the cross-cultural and cross-language equivalence of the Parenting Self-Agency Measure », *Family relations*, vol. 45, p. 216-222.

DUNCAN, G., & J. BROOKS-GUNN (1997). *Consequences of growing up poor*, New York, Russell Sage.

FISCELLA, K. (1999). « Is lower income associated with greater biopsychosocial morbidity? Implications for physicians working with underserved patients », *Journal of Family Practice*, vol. 48, n° 5, p. 372-377.

FLORSHEIM, P., P. TOLAN & D. GORMAN-SMITH (1998). « Family relationships, parenting practices, the availability of male family members, and the behavior of inner-city boys in single-mother and two-parent families », *Child Development*, vol. 69, n° 5, p. 1437-1447.

FRIEDEMANN, M. L., & A. A. WEBB (1995). « Family health and mental health six years after economic stress and unemployment », *Issues in Mental Health Nursing*, vol. 16, n° 1, p. 51-66.

FRODI, A. M., M. E. LAMB, L. A. LEAVITT & W. L. DONOVAN (1978). « Fathers' and mothers' responses to infant smiles and cries », *Infant behavior and Development*, vol. 1, p. 187-198.

HALPERN, L. F., T. F. ANDERS, C. G. COLL & J. HUA (1994). « Infant temperament: Is there a relation to sleep wake states and maternal night-time behavior? », *Infant Behavior and Development*, vol. 17, p. 255-268.

HARRIS, J.R. (1995). « Where is the child's environment? A group socialization theory of development », *Psychological Review*, vol. 102, n° 3, p. 458-489.

HARRIS, J.R. (1998). *The nurture assumption: Why children turn out the way they do*, New York, The Free Press.

HART, B., & T. R. RISLEY (1995). *Meaningful differences in the everyday experience of young American children*, Baltimore, Brookes.

HURT, H., E. MALMUD, L. E. BRAITMAN, L. M. BETANCOURT, N. L. BRODSKY & J. M. GIANNETTA (1998). « Inner-city achievers. Who are they? », *Archives of Pediatrics and Adolescent Medicine*, vol. 152, nº 10, p. 993-997.

ISABELLA, R. A. (1995). « The origins of infant-mother attachment: Maternal behavior and infant development », in R. VASTA (eds.), *Annals of child development*, vol. 10, London, Jessica Kingley, p. 57-82.

JOHNSTON, C., & E. J. MASH (1989). « A measure of parenting satisfaction and efficacy », *Journal of Clinical Child Psychology*, vol. 2, p. 167-175.

JOSEPH, R. (1999). « Environmental influences on neural plasticity, the limbic system, emotional development and attachment: a review », *Child Psychiatry & Human Development*, vol. 29, nº 3, p. 189-208.

KEITNER, G. I., C. E. RYAN, I. W. MILLER, R. KOHN, D. S. BISHOP & N. B. EPSTEIN (1995). « Role of the family in recovery and major depression », *American Journal of Psychiatry*, vol. 152, nº 7, p. 1002-1008.

KELLEY, M. L., J. SANCHEZ-HUCIES & R. WALKER, (1993). « Correlates of disciplinary practices in working- to middle-class African-American mothers », *Merrill-Palmer Quaterly*, vol. 39, p. 252-264.

LANDY, S., & K. K. TAM (1996). « Les pratiques parentales influencent bel et bien le développement des enfants du Canada », in Statistique Canada et Développement des ressources humaines Canada, *Grandir au Canada*, Ottawa, Ministre de l'Industrie, Catalogue no 89-550-MPF (Enquête nationale longitudinale sur les enfants et les jeunes [Canada]), 1205-6855, nº 1, p. 117-134.

LANDY, S., & K. K. TAM (1998). « Understanding the contribution of multiple risk factors on child development at various ages », Statistique Canada et Développement des ressources humaines Canada, Catalogue no W-98-22E.

LYONS-RUTH, K., D. B. CONNELL, H. U. GRUNEBAUM & S. BOTEIN (1990). « Infants at social risk: maternal depression and family support services as mediators of infant development and security of attachment », *Child Development*, vol. 61, p. 85-98.

LYONS-RUTH, K., B. REPACHOLI, S. McLEOD & E. SILVA (1991). « Disorganized attachment behavior in infancy: Short-term stability, maternal and infant correlates, and risk-related subtypes », *Development and Psychopathology*, vol. 3, p. 377-396.

LYTTON, H. (1990). « Child and parent effects in boys' conduct disorder: A reinterpretation », *Developmental Psychology*, vol. 26, p. 683-697.

MASH, E. J., & C. JOHNSTON (1983). « Parental perceptions of child behavior problems, parenting, self-esteem, and mothers' reported stress in younger and older hyperactive and normal children », *Journal of Consulting and Clinical Psychology*, vol. 51, p. 86-99.

MASH, E. J., C. JOHNSTON & K. KOVITZ (1983). « A comparison of the mother-child interactions of physically abused and nonabused children during play and task situations », *Journal of Clinical Child Psychology*, vol. 12, p. 337-346.

McLOYD, V.C. (1998). « Children in poverty: Development, public policy, and practice », in DAMON, W. (eds.), *Handbook of child psychology*, Fifth Edition, vol. 4, New York, John Wiley et Sons, p. 135-210.

MINISTÈRE DE LA SANTÉ ET DES SERVICES SOCIAUX (1991). *Un Québec fou de ses enfants*, Rapport du groupe de travail sur les jeunes, Québec, MSSS.

MINISTÈRE DE LA SANTÉ ET DES SERVICES SOCIAUX (1992). *La Politique de la santé et du bien-être*, Québec, Gouvernement du Québec.

MINISTÈRE DE LA SANTÉ ET DES SERVICES SOCIAUX (1997). *Priorités nationales de santé publique 1997-2002*, Québec, Gouvernement du Québec.

MRAZEK, P.J., & R.J. HAGGERTY (eds.) (1994). *Reducing risks for mental disorders: Frontiers for preventive intervention research*, Washington, National Academy Press.

MURRAY, A. D., & A. V. HORNBAKER (1997). « Maternal directive and facilitative interaction styles: associations with language and cognitive development of low risk and high risk toddlers », *Development and Psychopathology*, vol. 9, nº 3, p. 507-516.

OFFORD, D. R., M. H. BOYLE & Y. RACINE (1989a). « Ontario Child Health Study: Correlates of disorder », *Journal of the American Academy of Child and Adolescent Psychiatry*, vol. 28, nº 6, p. 856-860.

OFFORD, D. R., M. H. BOYLE & Y. RACINE (1989b). *Ontario Child Health Study: Children at risk*, Ministry of Community and Social Services, Queen's Printer for Ontario.

OLDS, D., C.R. HENDERSON, R. COLE, J. ECKENRODE, H. KITZMAN, D. LUCKEY, L. PETTITT, K. SIDORA, P. MORRIS & J. POWERS (1998). « Long-term effects of nurse home visitation on children's criminal and antisocial behavior: 15-year follow-up of a randomized controlled trial », *JAMA*, vol. 280, n° 14, p. 1238-1244.

OSOFSKY, J. D., D. M. HANN & C. PEEBLES (1993). « Adolescent parenthood: Risks and opportunities for parents and infants », in ZEANAH, C. (eds.), *Handbook of infant mental health*, New York, Guilford Press, p. 106-119.

PARKE, R. D., & R. BURIEL (1998). « Socialization in the family: Ethnic and ecological perspectives », in DAMON, W. (eds.), *Handbook of Child Psychology*, Fifth Edition, vol. 3, New York, John Wiley & Sons, p. 463-552.

PARKER, G., & P. LIPSCOMBE (1981). « Influences of maternal overprotection », *British Journal of Psychiatry*, vol. 138, p. 303-311.

PARKER, G. (1984). « The measurement of pathogenic parental style and its relevance to psychiatric disorder ». *Social Psychiatry*, vol. 19, p. 75-81.

PARKS, P. L., & V. L. SMERIGLIO (1986). « Relationships among parenting knowledge, quality of stimulation in the home and infant development », *Family Relations*, vol. 35, p. 411-416.

PATTERSON, G. R., & D. M. CAPALDI (1991). « Antisocial parents: Unskilled and vulnerable », in COWAN, P. A., & E. M. HETHERINGTON (eds.), *Family transitions*, Hillsdale, NJ, Erlbaum, p. 195-218.

PATTERSON, G. R., J. B. REID & T. J. DISHION (1992). *Antisocial boys*, Eugene, OR, Castalia.

ROGGE, R. D., & T. N. BRADBURY (1999). « Till violence do us part: The differing roles of communication and aggression in predicting adverse marital outcomes », *Journal of Consulting and Clinical Psychology*, vol. 67, n° 3, p. 340-351.

ROSENBAUM, D.P., & G.S. HANSON (1998). « Assessing the effects of school-based drug education: A six-year multilevel analysis of Project D.A.R.E. », *Journal of Research in Crime & Delinquency*, vol. 35, n° 4, p. 381-412.

ROWE, D.C. (1994). *The limits of family influence. Genes, experience, and behavior*, New York, Guilford Press.

RUBIN, K. H., L. J. LEMARE & S. LOLLIS (1990). « Social withdrawal in childhood: Developmental pathways to peer rejection » in ASHER, S.R. & J. COIE (eds.), *Peer rejection in childhood*, New York, Cambridge University Press, p. 217-249.

RUTTER, M. (1990). « Psychosocial resilience and protective mechanisms », in ROLF, J. , A. S. MASTEN, D. CICCHETTI, K H. NIECHTERLEIN & S. WEINTRAUB (eds.), *Risk and protective factors in the development of psychopathology*, New York, Cambridge University Press, p. 181-214.

RUTTER, M., H. GILLER & A. HAGELL (1998). *Antisocial behavior by young people*, New York, Cambridge University Press.

SMERIGLIO, V. L., & P. L. PARKS (1983). « Measuring mothers' perceptions about the influence of infant caregiving practices », *Child Psychiatry and Human Development*, vol. 13, p. 237-244.

SMITH, K. E, S. H. LANDRY, P. R. SWANK, C. D. BALDWIN, S. E. DENSON & S. WILDIN (1996). « The relation [illegible] medical risk and maternal stimulation with preterm infants' development of cognitive, language and daily living skills », *Journal of Child Psychology & Psychiatry & Allied Disciplines*, vol. 37, n° 7, p. 855-864.

SPIEKER, S. J., N. C. LARSON, S. M. LEWIS, T. E. KELLER & L. GILCHRIST (1999). « Developmental trajectories of disruptive behavior problems in preschool children of adolescent mothers », *Child Development*, vol. 70, n° 2, p. 443-458.

STRAUSS, R. S., & J. KNIGHT (1999). « Influence of the home environment on the development of obesity in children », *Pediatrics*, vol. 103, n° 6, e85.

STRAYHORN, J. M. & C. S. WEIDMAN (1988). « A Parent Practices Scale and its relation to parent and child mental health », *Journal of the American Academy of Child and Adolescent Psychiatry*, vol. 27, n° 5, p. 613-618.

TETI, D. M., & D. M. GELFAND (1991). « Behavioral competence among mothers of infants in the first year: The mediational role of maternal self-efficacy », *Child Development*, vol. 62, p. 918-929.

THOMASGARD, M. T., J. P. SHONKOFF, W. P. METZ & C. EDELBROCK (1995). « Parent-child relationship disorders. Part II. The vulnerable child syndrome and its relation to parental overprotection », *Developmental and Behavioral Pediatrics*, vol. 16, p. 251-256.

THOMPSON, R. A. (1998). « Early sociopersonality development », in DAMON, W. (eds.), *Handbook of Child Psychology*, Fifth Edition, vol. 3, New York, John Wiley & Sons, p. 25-104.

TREMBLAY, R.E., & W. CRAIG (1995). « Developmental crime prevention », in TONRY, M., & D.P. FARRINGTON (eds.), *Building a safer society: Strategic approaches to crime prevention*, vol. 19, Chicago, The University of Chicago Press, p. 151-236.

TREMBLAY, R.E., D. LEMARQUAND & F. VITARO (1999). « The prevention of ODD and CD », in QUAY, H.C., & A.E. HOGAN, (eds.), *Handbook of disruptive behavior disorders*, New York, Kluwer Academic/Plenum Publishers, p. 525-555.

TULKIN, S. R., & B. J. COHLER (1973). « Child-rearing attitudes and mother-child interaction in the first year of life », *Merrill-Palmer Quaterly*, vol. 19, p. 95-106.

VITARO, F., R.E. TREMBLAY, M. KERR, L. PAGANI-KURTZ & W.M. BUKOWSKI (1997). « Disruptiveness, friends' characteristics, and delinquency in early adolescence: A test of two competing models of development », *Child Development*, vol. 68, nº 4, p. 676-689.

WALLACE, I. F., J. E. ROBERTS & D. E. LODDER (1998). « Interactions of African American infants and their mothers: relations with development at 1 year of age », *Journal of Speech, Language, & Hearing Research*, vol. 41, nº 4, p. 900-912.

WEINRAUB, M., & B. WOLF (1983). « Effects of stress and social support on mother-child interactions in single- and two-parent families », *Child Development*, vol. 42, p. 1297-1311.

WELLS-PARKER, E., D. L. MILLER & S. TOPPING (1990). « Development of control of outcome scales and self-efficacy scales for women in four life roles », *Journal of Personality Assessment*, vol. 54, p. 564-575.

WERNER, E. E. (1993). « Risk, resilience, and recovery: Perspectives from the Kauai Longitudinal Study », *Development and Psychopathology*, vol. 5, p. 503-515.

WERNER, E. E., & R. S. SMITH (1992). *Overcoming the odds: High risk children from birth to adulthood*, Ithaca, NY, Cornell University Press.

WHALER, R. G., & J. E. DUMAS (1989). « Attention problems in dysfunctional mother-child interactions: An interbehavioral model », *Psychological Bulletin*, vol. 105, p. 116-130.

WHITE, C., & C. BARROWCLOUGH (1998). « Depressed and non-depressed mothers with problematic preschoolers: attributions for child behaviors », *British Journal of Clinical Psychology*, vol. 37, Pt 4, p. 385-398.

WYMAN, P. A., E. L. COWEN, W. C. WORK, L. HOYT-MEYERS, K. B. MAGNUS & D. B. FAGEN (1999). « Caregiving and developmental factors differentiating young at-risk urban children showing resilient versus stress-affected outcomes: A replication and extension », *Child Development*, vol. 70, nº 3, p. 645-659.

Glossary

Centre de la petite enfance	Child-care centre
Commission d'accès à l'information du Québec - CAI	Québec Access to Information Commission
Conseil québécois de la recherche sociale (CQRS)	Social Research Council of Québec
Direction de la méthodologie et des enquêtes spéciales, ISQ	Methodology and Special Surveys Division, ISQ
Direction de la santé publique de la Régie régionale de la santé et des services sociaux de Montréal-Centre	Public Health Department, Montréal-Centre Regional Health Board
Direction de la technologie et des opérations statistiques, ISQ	Technology and Statistical Operations Division, ISQ
Direction des normes et de l'information, ISQ	Standards and Information Division, ISQ
Direction Santé Québec, ISQ	Health Québec Division
Étude des jumeaux nouveaux-nés au Québec - ÉJNQ	Québec Study of Newborn Twins
Fichier maître des naissances	Master Birth Register
Fonds de la recherche en santé du Québec (FRSQ)	Health Research Fund of Québec
Fonds pour la formation de chercheurs et l'aide à la recherche (FCAR)	Researcher Education and Research Assistance Fund
Groupe de recherche sur l'inadaptation psychosociale chez l'enfant - GRIP	Research Unit on Children's Pyschosocial Maladjustment
Institut de la statistique du Québec, ISQ	Québec Institute of Statistics
La Politique Familiale	Policy on Families
Le Rapport Bouchard (1991) « Un Québec fou de ses enfants »	The Bouchard Report, 1991: A Québec in Love with its Children
Les Priorités nationales de santé publique	Priorities for Public Health
ministère de l'Éducation	Ministry of Education
ministère de la Famille et de l'Enfance	Ministry of Family and Child Welfare
ministère de la Justice	Ministry of Justice
ministère de la Recherche, Science et Technologie	Ministry of Research, Science and Technology
ministère de la Santé et des Services sociaux du Québec (MSSS)	Ministry of Health and Social Services of Québec
ministère de la Sécurité publique	Ministry of Public Security
ministère de la Solidarité sociale	Ministry of Social Solidarity - formerly Income Security (Welfare)
Politique de la santé et du bien-être	Policy on Health and Well-Being
Service de la recherche	Research services
Service de support aux opérations de la Régie de l'assurance-maladie du Québec - RAMQ	Operations Support Section of the Québec Health Insurance Board

List of Papers in Volume 1 of this Series

This paper is one of a series comprising Volume 1 of: JETTÉ, M., H. DESROSIERS, R. E. TREMBLAY and J. THIBAULT (2000). *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1.

The following is a list of all the analytical papers in Volume 1 available or planned as of this date:

JETTÉ, M., and L. DES GROSEILLIERS (2000). "Survey Description and Methodology" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 1.

DESROSIERS, H. (2000). "Family, Child Care and Neighbourhood Characteristics" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 2.

SÉGUIN, L., L. POTVIN, K. FROHLICH and C. DUMAS (2000). "Standard of Living, Health and Development, Part I - Child Poverty, Health and Development" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 3. (To be published in 2001)

PAQUET, G., and L. DUBOIS (2000). "Standard of Living, Health and Development, Part II - Social Inequality and Child Development" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 3. (To be published in 2001)

PETIT, D., C. SIMARD, J. PAQUET and J. MONTPLAISIR (2000). "Sleep" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 4.

DUBOIS, L., B. BÉDARD, M. GIRARD and É. BEAUCHESNE (2000). "Diet" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 5.

VEILLEUX, G., M. OLIVIER, J. DUROCHER, M. GÉNÉREUX and M. LÉVY (2000). "Habits Related to Oral and Dental Health" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 6.

JAPEL, C., R. E. TREMBLAY, P. McDUFF and M. BOIVIN (2000). "Temperament" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 7.

C. JAPEL, R. E. TREMBLAY, P. McDUFF and A. GIRARD (2000). "Motor, Social and Cognitive Development, Part I - Motor and Social Development" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 8.

BAILLARGEON, R., C. JAPEL, P. McDUFF and A. GIRARD (2000). "Motor, Social and Cognitive Development, Part II - Cognitive Development" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 8.

JAPEL, C., R. E. TREMBLAY and P. McDUFF (2000). "Parents' Health and Social Adjustment, Part I - Lifestyle Habits and Health Status" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 9.

ZOCCOLILLO, M. (2000). "Parents' Health and Social Adjustment, Part II - Social Adjustment" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 9.

BOIVIN, M., D. PÉRUSSE, V. SAYSSET, N. TREMBLAY and R. E. TREMBLAY (2000). "Parenting and Family Relations, Part I - Parenting Perceptions and Behaviours" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 10.

JAPEL, C., R. E. TREMBLAY and P. McDUFF (2000). "Parenting and Family Relations, Part II - Family Environment" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 10.

MARCIL-GRATTON, N., and H. JUBY (2000). "Conjugal Life of the Parents, Part I - The Parents' Conjugal History: A Determinant of the Child's Family Path?" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 11.

DESROSIERS, H., M. BOIVIN and V. SAYSSET (2000). "Conjugal Life of the Parents, Part II - Spousal/Partner Support - What Do the Mothers Think?" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 11.

THIBAULT, J., M. JETTÉ, H. DESROSIERS and R.E. TREMBLAY (2000). "Concepts, Definitions and Operational Aspects, Part I - Design of Phase I of ÉLDEQ, Instruments and Procedures" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 12. (To be published in December).

DESROSIERS, H., M. BOIVIN and L. DES GROSEILLIERS (2000). "Concepts, Definitions and Operational Aspects, Part II - Data, Variables and Scales" in *Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)*, Québec, Institut de la statistique du Québec, Vol. 1, No. 12. (To be published in December).

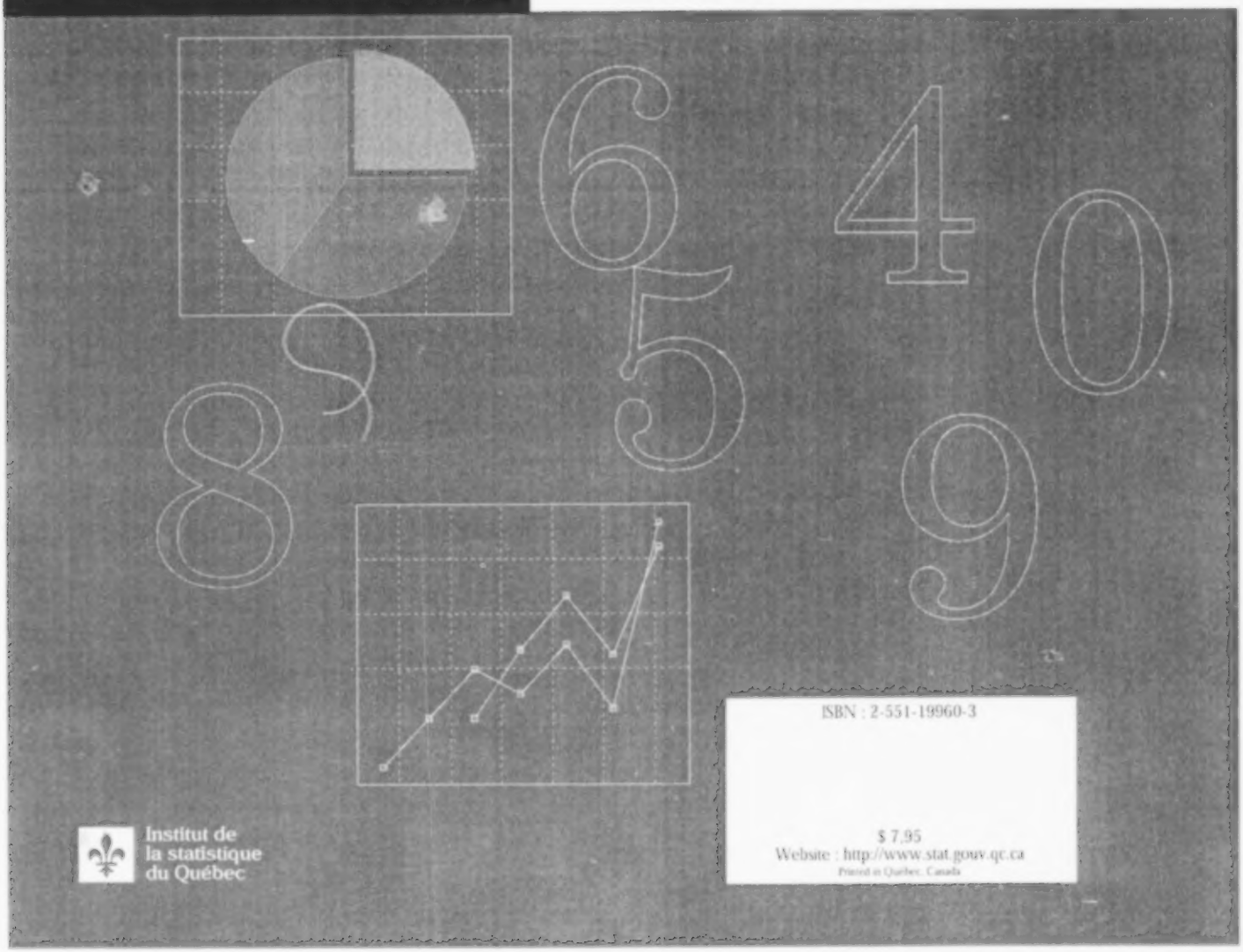
Note: Other analytical papers may be published as part of Volume 1 in this series, either in December 2000 or in 2001.

"The mission of the Institut is to provide reliable and objective statistical information on the situation of Québec as regards all aspects of Québec society for which such information is pertinent. The Institut shall be the central authority for the production and dissemination of statistical information for the government departments and bodies, except information produced for administrative purposes. The Institut shall be responsible for the carrying out of statistical surveys of general interest."

Act respecting the Institut de la statistique du Québec (S.Q. 1998, c. 44), passed by the National Assembly of Québec on 19 June 1998.

Being a parent constitutes one of the most demanding social roles, particularly in the first year of a child's life, when parenting behaviours are generally recognized as the cornerstone of the infant's socio-emotional development. The first part of this paper presents an overview of how mothers and fathers in Québec perceive and behave toward their infant. This is followed by an examination of the extent to which these perceptions and behaviours are related to specific infant, parent and family characteristics.

Family relationships and other facets of the parent/infant relationship are the subject of the second part of this paper. More precisely, it describes family functioning in the home environments of Québec infants. Various measures of the quality of parent/child interactions are presented, as evaluated by the person who knows the infant best and a third party. These dimensions of the family environment of Québec infants age 5 months in 1998 are then examined in relation to various sociodemographic and parental characteristics.



ISBN : 2-551-19960-3

$ 7.95
Website : http://www.stat.gouv.qc.ca
Printed in Québec, Canada

Institut de
la statistique
du Québec